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PREOPERATIVE AND POSTOPERATIVE MANAGEMENT OF GALL BLADDER DISEASE—Raymond W. McNealy, M.D., Chicago, Illinois . . . . . Page 497

THERAPY IN PNEUMONIA—Ralph H. Major, M.D., Kansas City, Kansas . . . . . Page 502

PARTIAL SPONTANEOUS PNEUMOTHORAX—Hugh M. Swaney, M.D., Goodland, Kansas, and Galen M. Tice, M.D., Kansas City, Kansas . . . . . Page 507

THE MEDICAL MANAGEMENT OF URINARY INFECTION IN PREGNANCY—O. W. Davidson, M.D., Kansas City, Kansas . . . . . Page 511

COMPLETE TABLE OF CONTENTS . . . . . Page IV

VOLUME XLI December, 1940 NUMBER 12

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TABLE OF CONTENTS

DECEMBER, 1940

ORIGINAL ARTICLES

Preoperative and Postoperative Management of Gall Bladder Disease — Raymond W. McNealy, M.D., Chicago, Illinois 497

Therapy in Pneumonia — Ralph H. Major, M.D., Kansas City, Kansas 502

Partial Spontaneous Pneumothorax—Hugh M. Swaney, M.D., Goodland, Kansas, and Galen M. Tice, M.D., Kansas City, Kansas . . . 507

The Medical Management of Urinary Infection in Pregnancy—O. W. Davidson, M.D., Kansas City, Kansas 511

EDITORIALS

Osteopathy 515

Sulfathiazole a New Therapeutic Agent . . . 517

MISCELLANEOUS

President's Page 514

Cancer Control 517

Medical Economics 518

Tuberculosis Control 520

News Notes 522

Book Nook 530

Auxiliary 534

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STUDIES IN THE AVITAMINOSES

This page is the final of a series on vitamin deficiencies presented by the research division of The Upjohn Company because of the profession's widespread interest in the subject. A full color, two-page insert on the same subject appears in the December 7 issue of The Journal of the American Medical Association.

The Exacerbation of LATENT PELLAGRA by Acute Infections

Vitamin requirements are increased by many factors, especially by acute infectious disease. Field, commenting on this phenomenon, states that the onset of pellagra may coincide with pregnancy, organic gastrointestinal disease, severe and prolonged illnesses, and dietary restriction for therapeutic purposes. The patient whose tongue is shown developed this manifestation of pellagra during the course of lobar pneumonia. After nicotinic acid therapy was started she coughed up a cast of the esophagus which consisted of a grey membrane similar to that covering the tongue. The pellagrous symptoms responded promptly to treatment.

Illustration courtesy of Virgil P. W. Sydenstricker, M.D., University of Georgia Medical School, Augusta, Ga.

Illustration courtesy of Virgil P. W. Sydenstricker, M.D., University of Georgia Medical School, Augusta, Ga.

The Coexistence of Vitamin Deficiency States

Many authors have recently presented evidence that vitamin deficiency states often are multiple. Strauss has called attention to the fact that deficiency disease in man, unlike that experimentally produced in animals, is rarely limited to a single factor. The patient whose hands are shown had partaken of a markedly deficient diet for several months. As a result, scurvy and pellagra developed concurrently. The ecchymoses of the former and the dermatitis of the latter are clearly visible. Specific therapy together with dietary adjustment led to prompt remission of these signs.

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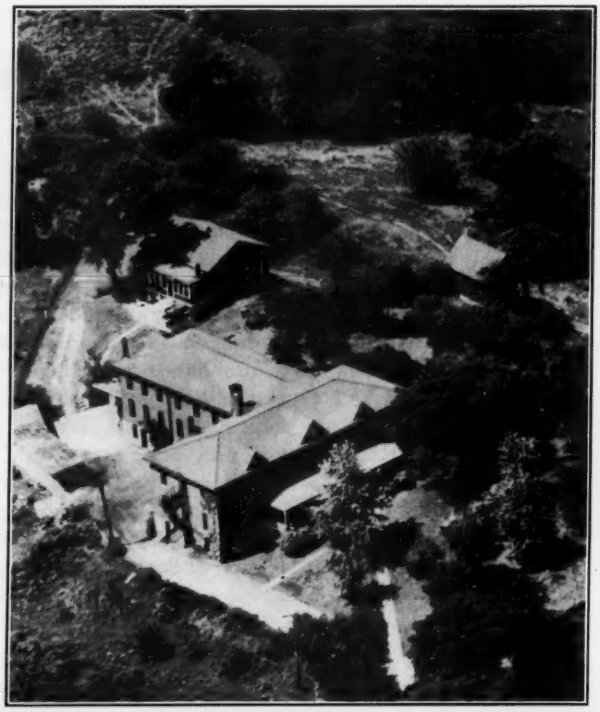

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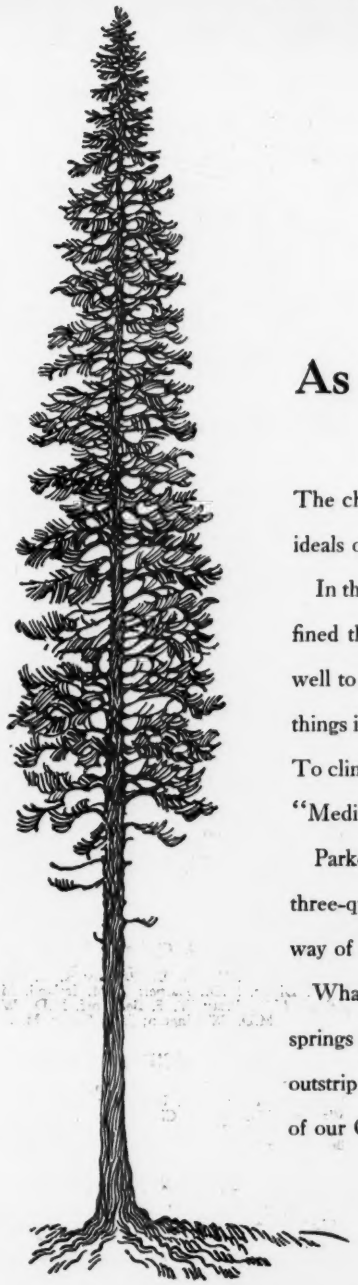

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PREOPERATIVE AND POST-OPERATIVE MANAGEMENT OF GALL BLADDER DISEASE*

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The pre and postoperative care of patients with gall bladder disease has received a great deal of attention during the past few years. The technical details incident to difficult cases of gall bladder and common-duct surgery continue to hold considerable interest for those who do the routine general surgical practice. In the larger medical centers and especially in the large charity services one is impressed with the number of patients who, when they present themselves for surgery on the gall bladder, are in poor shape to withstand this or any other type of major surgery.

In private practice one sees a great many more ambulatory, fairly comfortable patients who are not acutely ill, but who in the course of an examination have been shown to be the host of either a nonfunctioning gall bladder or gall stones. These patients are not to be compared with those sick patients who occupy the beds in our large hospitals, and the surgical risk is entirely different.

Gall bladder disease may mean anything from a very mild physiological dysfunction to a complete histological disorganization with the most extensive disturbance of physiology in the liver, kidneys and pancreas.

The intimate relationship of the organs of the right upper quadrant of the abdomen and their common contribution to the processes of digestion of food links them almost inseparably in physiologic activity and pathologic change. This is especially true of the gall bladder which may become the seat of gall stone formation as a result of a disturbed relationship between the amount of cholesterol in the bile and the concentration of bile acids. It is a well-known fact that gall stones are common in women who have had repeated pregnancies. It has been shown that during the later months of a pregnancy there is a decided increase in the cholesterol content of the blood. During the puerperium the bile may contain unusually large amounts of cholesterol. The bile acids secreted by the liver at this time may not keep pace with the cholesterol content of the bile and this may result in the precipitation of cholesterol crystals in the gall bladder. This does not explain all gall stone formations for undoubtedly other factors are equally important.

The ability of the gall bladder to concentrate its contents may be an important factor in the production of gall bladder disease. It seems logical to conclude that if certain chemical products which are present in the bile were to be concentrated beyond a certain degree this concentrated material might then prove irritating to the gall bladder. This type of chemical inflammation has been produced experimentally. It is reasonable to suppose that under certain circumstances the body itself may produce chemical compounds which when eliminated in the bile and concentrated by the gall bladder may contribute to an irritation of this organ.

It is unfortunate that many regard the gall bladder as an organ similar to the appendix and speak for its removal in disease in about the same way that they would of the appendix. This concept can lead to serious trouble. It is true that the human being can get along fairly well without a gall bladder. This is attested to by the large number of people who have had their gall bladders removed in early life and live comfortably to an old age.

While it may be quite a chore in some instances to remove a gall bladder due to the technical difficulties, it is much more common to have the serious complications develop from those conditions which arise outside of the gall bladder area itself. Much has been said recently about the necessity of operating on acute cholecystitis in the early hours of the disease. There is not time to discuss this question further than to say that no inflammatory condition of the biliary tract is such an emergency that the patient should be deprived of a thorough physical examination including blood count, urine analysis

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and blood chemistry study. The chemical and water balances of the patient must be established and the liver should be bolstered by the intravenous use of glucose solution.

As mentioned before it is the chronic gall bladder condition, in which there has been an insidious undermining of the general health of the individual, that is most likely to find the patient poorly prepared for surgery. The liver is a most important organ in the human and its functions are so numerous that discussion of these would consume much time and lead us from our immediate thesis.

Since our problem of preparation of these patients with gall bladder disease depends so much on the liver and its activities, it is unfortunate that no universally dependable test of the liver's general efficiency has been developed to date. Probably the most reliable test of liver function which has been brought forth lately is that advocated by Armand Quick. It depends on the administration of a measured amount of sodium benzoate and its recovery in the urine as hippuric acid. The hippuric acid content secreted within the first two hours following administration is determined and this transposed into terms of sodium benzoate. The principle of the test depends on the presence in the liver of adequate amounts of amino-acetic acid (glycine) in whose presence sodium benzoate is conjugated and hippuric acid formed. While this test has value it is not sufficiently delicate to be thoroughly dependable in those borderline cases which are the ones usually misjudged. We use it routinely as a safeguard against overlooking very severe grades of liver exhaustion.

In the absence of accurate indices of the liver functions and the associated changes in other metabolic and reparative processes of the body, a very broad view of our responsibilities must be taken. In addition to the usual and customary safeguards which are thrown around any abdominal operation, special attention must be given to liver lethargy and bile secretion and absorption.

Glycogen storage and mobilization are exceedingly important functions of the liver. While muscle glycogen comprises the largest amount of stored carbohydrate in the body, it is the liver glycogen which is first depleted by fasting. It has been shown repeatedly that livers with a low glycogen content are more susceptible to injury. The ability of the liver to store glycogen is an index of its functional capacity. This organ may store, at one time, as much as 300 Gm. (10 ounces) of glycogen readily subject to glycogenolysis with formation of glucose. The value of selective diet in jaundice is emphasized by the experimental work by Mann and Bollman who showed that jaundiced dogs failed to survive a diet of meat for more than a brief period, but would live several months on a diet of milk and syrup.

A diet high in carbohydrates should be given where the patient can take food. It has been our practice to allow the patient to have a rather liberal diet if no vomiting or colic is present. The use of cereals, gruels, jellies, jams, syrups and fruit juices is encouraged. Large amounts of sugar may be given in the form of Dexin***. This sugar seems well tolerated and produces little distress from fermentation. Green salads and citrus fruits are given with dressings of a very palatable type made with mineral oil. The protein side of the diet should be limited to milk and egg proteins.

Where food cannot be taken or urgency exists, it becomes necessary to resort to parenteral glucose administration. The practice of giving glucose solutions per rectum is of doubtful value. In studies made by the writer and others, it was shown that little glucose is absorbed from the colon. It would seem more practical to administer glucose either subcutaneously or intravenously. A five per cent solution in distilled water properly buffered may be used for either. The amount and rate of administration demand some caution. When given intravenously the rate should not exced two drops per second and should preferably be slower. The usual practice is to give about 3000 to 4000 c.c. of five per cent solution in twenty-four hours. The urine is tested frequently the first and second days of use and if no sugar appears in the urine, tests are made daily thereafter. The initiation of glucose therapy should not be delayed until the last minute and then pushed so rapidly that untoward reactions appear and much of the sugar spills over in the urine. It should be started as soon as the patient becomes a surgical prospect and continued until the convalescence is definitely established and the patient is able to ingest a near maintenance value of easily assimilable carbohydrates.

The use of insulin to facilitate glycogen storage is suggested by Lukens who states that glucose and insulin together produce the maximum storage of glycogen in both normal and diabetic animals. In diabetics or those patients with a low sugar tolerance, the intravenous glucose is covered with insulin. Where diabetes is present, one should guard against excessive doses of calcium because of its tendency to raise blood sugar levels. Insulin is not used in routine cases.

Since we began the rather routine use of glucose solution intravenously as a means of fortifying the liver, we have made careful observations of the patient's ability to store glucose. It has been our

***Dexin is a product of Burroughs Welcome & Company.

habit to give a five per cent glucose solution in distilled water at the rate of 500 c.c. in sixty minutes. Twenty minutes after this amount has been infused a specimen of urine is examined and another 500 c.c. is then started, and twenty minutes after its infusion a second urinalysis is made. If no sugar appears in the urine of either specimen, it suggests that the liver is in good condition. If no sugar appears in the first specimen and only a trace in the second, it suggests that the liver is in fair condition, but if sugar appears in the first and shows an increased presence in the second specimen it suggests a poor risk. No doubt there are many objections which might be offered to the acceptance of this routine as a very good test of liver function, yet we feel that it offers considerable aid when used in conjunction with other tests.

The importance of maintaining water balance in surgical patients has been stressed by Coller and others. In the jaundiced patient it is very necessary to maintain this balance and to favor elimination. If adequate amounts of fluids cannot be taken by mouth then plain tap water by protoclysis will serve adequately in most cases. Where some impairment of renal functions exists it is better to use tap water than normal salt solution per rectum. In patients whose twenty-four hour output of urine is less than 1000 c.c., and where no serious kidney lesion can be demonstrated, the intravenous administration of 500 to 1000 c.c. of ten per cent glucose may increase the urine output. Faltitschek and Hess point out that cellular impairments of the liver, if they reach a severe degree, cause disturbances in the water balance. They suggest that there is also a renal factor concerned in the disordered water economy of patients with liver disease. Here again, there probably is a vicious circle whose interruption may prove a considerable task. Every jaundice patient should have regular preoperative urinalyses. Where the jaundice is severe or has existed for some time or the kidneys show a diminished output in the presence of adequate intake, the functional capacity of the kidneys should be investigated and blood chemistry studies made. Means to combat nitrogenous retention and oliguria are those commonly employed in renal dysfunction without jaundice. Coller has shown that at least 3000 c.c. of fluids must be introduced in each twenty-four hours to maintain a water balance. This may be done orally, subcutaneously or per rectum as indicated.

The liver is necessary for deamination of amino acids, synthesis of urea and destruction of uric acid. In liver damage, protein metabolism is impaired and excess amounts of protein waste products tend to accumulate. A low protein diet will avoid further embarrassment to an already overtaxed liver. Protein feeding increases the bile-salt production. Since retained bile salts may account for some of the toxemia in jaundice, it would seem important to limit protein intake both before and after operation.

The liver is also the principal site of formation of fibrinogen and exerts a regulatory influence over the albumin-globin ratio of the blood plasma. The fairly constant disturbance of the albumin-globin ratio in liver damage suggests the use of this finding as a prognostic aid. When present, this should serve as a warning against surgery except under the most unusual circumstances.

The work of Whipple indicates that the liver is intimately associated with production of hemoglobin. Snell suggests that a patient who has a chronic hepatic lesion is poorly equipped to adjust himself to even the less severe degrees of anoxemia because of the limitation in production of hemoglobin.

In the presence of jaundice with its associated hepatic damage, blood transfusions have a favorable influence. More hemoglobin is supplied, thus increasing the oxygen capacity of the blood. There is a better saturation of the arterial blood with oxygen which occurs either as a result of an improvement in the general circulation or in some change in the character of the blood. There also occurs an increase in the functional capacity of hemoglobin. In discussing the value of blood transfusions in jaundiced patients, Judd refers to the work of Rich who noted atrophy of cells around the central veins of the hepatic lobules, presumably the result of an oxygen deficiency. Anoxemia results in liver damage and the damaged liver in turn perpetuates the anoxemia by its limited production of oxygen carrying hemoglobin. In most cases one or two, or in desperate risks, even more transfusions of 500 c.c. of blood should precede surgery.

The proper quantity and the mode of administration of calcium vary considerably according to different writers. Oral administration has been used less frequently in recent years, as the rate of absorption is regarded as too slow for practical purposes. Recent experiments by Ivy would tend to show that the rate of absorption of calcium given orally depends to some considerable degree on the presence of adequate free hydrochloric acid in, and the rate of emptying of the stomach. Since many patients with gall bladder disease may have an achlorhydria the use of peroral calcium might be questioned in these cases. In most instances a more rapid and intense effect is had by the use of soluble salts intravenously. Those most commonly used are ten per cent solutions of calcium chloride or calcium gluconate. These may be had in ampoule form ready for use and are usually given in ten c.c. amounts once or twice daily. The chloride produces a very marked

necrosis of the overlying tissues if any escapes during or after injection. The gluconate is much less irritating and may even be given intragluteally to prolong the action.

The liver plays an important role in vitamin synthesis and storage. In the jaundiced patient the liver may be damaged so that absorption, synthesis and storage of vitamins may be deficient. If adequate bile does not reach the intestinal tract there occurs a marked disturbance of fat digestion and absorption. Ingested fat appears in large quantities in the feces of animals whose bile is diverted from the intestinal tract. It is reasonable, therefore, to expect those vitamins which are fat soluble to be excreted along with the undigested fat. The best-known fat soluble vitamins are A, D and K.

VITAMIN A

Vitamin A acts by increasing the ability of the body to resist disease. It is suggested that it has to do with the maintenance of intact, healthy epithelial membranes which constitute the first line of defence against bacterial invasion. The principle source of vitamin A is in fats of animal origin. Schmidt and his co-workers presented evidence that absorption of vitamin A, in the form of cod liver oil, occurs in the absence of bile in the intestine, but beta carotene, the precursor of vitamin A, is not absorbed in the absence of bile. Since cod liver oil is not an item in the average diet, it is likely that the vitamin A intake is almost wholly ingested in the form of carotene.

As a precautionary measure against deficiency it would appear that vitamin A in concentrated form should be administered as a routine part of the preoperative preparation in those patients who give a history of long standing gastro-intestinal disturbances and especially in those who show a low blood platelet count. In severe obstructive jaundice it may be given parenterally or if given orally it should be administered along with bile salts. It has been our practice to use commercial ox or pig bile in five to seven grain doses three times a day. Our use of commercial ox or pig bile seems warranted because Horrall, Still and their associates have analyzed a number of these products and find them to contain sufficient bile acids and salts to act on the fats in the alimentary canal and enhance the action of lipase. The use of dehydrocholic (triketocholanic) acid (decholin) is contraindicated in obstructive jaundice and it should not be used as a substitute for the whole bile mentioned above. Dehydrocholic (triketocholanic acid (decholin) acts as a choleretic, increasing the flow of bile. Its use after the release of the obstruction in jaundice has been a routine procedure in our cases. In some instances the twenty-four hour output of bile has been augmented by fifty per cent following its administration.

VITAMIN D

The functions of vitamin D are to facilitate the absorption of calcium and phosphorus from the intestine and maintain the level of calcium and phosphorus in the blood. It increases the net retention of calcium in the body in ordinary doses. Like vitamin A, its absorption rate from the intestine bears a distinct relation to the fat absorption rate, which in turn is dependent on the presence of bile in the intestinal tract. This fact was established by Greaves and Schmidt in 1932 and confirmed by Taylor in 1935. The importance of an adequate vitamin D absorption has been established in clinical practice by the work of McNealy, Shapiro and Melnick and further substantiated by the recent work of Johnson and by Boys of Ann Arbor. The method of administration commonly employed is to give thirty drops of viosterol, 250 D, three times a day. Viosterol is usually administered in conjunction with the carotene and commercial ox or pig bile as was described under vitamin A therapy.

VITAMIN C

Vitamin C is the water soluble anti-scorbutic element which occurs in fresh foodstuffs, fruit juices, and vegetables, and is found in small amounts in fresh milk and raw meat juice. The absence of vitamin C from the diet produces a condition known as scurvy, whose characteristic symptom is hemorrhage. The hemorrhages may be due to changes in the vessel walls. It is possible that vitamin C controls the nutrition of the endothelium of the capillaries. At the present time estimations are being made of the cevitamic acid concentration in the blood of all patients suffering from gall bladder disease who are admitted to our service at Wesley Memorial Hospital.

One of my associates, Dr. Gubler, has been making a study of the deficiency states which result from restricted dietary regimes commonly exhibited in patients will gall bladder dysfunction. Several instances of subclinical scurvy have been noted. It is possible that this may be an important hemorrhagic factor in some jaundice cases. It is, at least, an indication for regular estimation of vitamin C in chronic cases and if a deficiency state is found, it should be corrected. Orange juice sweetened with glucose will be efficient if the patient can take food by mouth. If parenteral administration is necessary it may be given subcutaneously in daily .025 to .050 mg. doses of cevitamic acid until a normal level is reached.

VITAMIN K

This is a fat soluble vitamin which occurs in hog's liver, some fish, soybeans and alfalfa. Dam and Hen-

drick showed that a deficiency in the diet of chicks produced a hemorrhagic disease. McCoy states that a deficiency in vitamin K causes a hemorrhagic disease in humans which resembles scurvy, but is not relieved by citrus fruit juice and cevitamic acid. Snell has advocated the use of vitamin K along with oral administration of bile as a means of combating the hemorrhagic tendency in jaundice.

It is rather generally accepted that the hemorrhagic tendency which we are familiar with in obstructive jaundice bears a close relationship to the prothrombin level of the blood. Prothrombin is a complex protein which is in all probability produced in the liver. In jaundiced patients the lowered prothrombin level may be brought about by a failure of the liver to produce an adequate amount of prothrombin or by a destruction of prothrombin in excess of its production.

Hemorrhagic tendencies usually do not become manifest until the prothrombin level has reached the neighborhood of twenty per cent of its normal concentration. It has been found that the administration of vitamin K either as a natural concentrate or one of the synthetic substitutes having the general formula (2-methyl-1:4-naphthoquinone) has been found to raise a low prothrombin content of the blood plasma. The exact steps in the synthesis of vitamin K into the complex protein prothrombin are not known. It is reasonable to assume that the structure of vitamin K makes it a convenient fraction for the liver to convert into prothrombin.

The administration of vitamin K by mouth does not insure its absorption in every instance. To insure its passage from the intestinal tract into the circulation and to the liver it is necessary to have bile salts present in the intestine. Even if these two requirements are fulfilled there still remains the necessity of a good functioning liver to synthesize this precursor into prthrombin.

At present, attention is being centered on the importance of certain synthetic products as readily available sources of vitamin K. In a study of the hemorrhagic tendency in jaundice McNealy, Shapiro and Melnick showed that the administration of viosterol with bile salts produced very favorable results. At the time this work was published in 1935 it was thought that vitamin D was an important factor in the hemorrhagic tendency. Dam and Glavind state that the only fat soluble vitamin which is known to prevent hemorrhagic diathesis is vitamin K. It has been shown that vitamin K can be synthesized during the spoilage of foodstuffs and that a number of bacteria, including the colon bacillus and the bacillus subtilis are capable of synthesizing a fat soluble anti-hemorrhagic factor. Bacterial putrefaction of fish meal was one of the early methods employed in vitamin K concentrates.

It has occurred to the author that some fraction of the viosterol may be useful to the liver in its synthesis of prothrombin. It is also possible that bacterial action on the viosterol may have produced a fraction which was made available to the liver for ultimate conversion into prothrombin. While these are purely conjectures the fact remains that excellent results have followed the use of viosterol and bile salts in the author's hands as well as in the hands of many others. Our inability to explain the exact method of action does not militate against the favorable effects achieved. One must not neglect the important fact that it is not the vitamin K, but prothrombin which is deficient in the blood. Even vitamin K must undergo a synthesis by the liver to be effective. This makes it imperative that the liver be in a functioning state in order that vitamin K or any other prothrombin precursor may be synthesized by the liver. Where liver damage is excessive no other method of direct introduction of prothrombin can be substituted for blood transfusion.

VITAMIN P

This is a water soluble vitamin found in lemons and red peppers. It is described as a vitamin which controls permeability of the capillaries. Its definite place is not yet established.

Postoperatively our problem differs little from the usual care of patients who have had operations on their gastro-intestinal tract. The maintenance of a water and chemical balance must be studiously adhered to. The urine output should be kept close to 1000 c.c. in twenty-four hours. The sudden influx of bile unchanged by delay in gall bladder or ducts may encourage regurgitation into the stomach, with persistent vomiting. In such cases the duodenal suction tube should be inserted early to avoid the accumulation of bile in the stomach.

SUMMARY

The preparation of the patient with "gall bladder disease" includes all of the precautionary and rehabilitative measures which should precede every major operation.

In addition it should include measures directed especially toward improving the functions of the liver.

The diet should be rich in carbohydrates and poor in proteins.

The water balance should be regulated.

In chronic cases blood chemistry studies should be made where there is indication of disturbance of renal function.

Glucose should be administrated in adequate

amounts. An isotonic, properly buffered solution in distilled water may be used intravenously or subcutaneously.

Normal salt solution should be given in sufficient amounts to overcome the loss of salts by vomiting or diarrhoea.

Blood transfusions are of definite value.

The use of calcium salts intravenously is indicated.

Vitamin deficiencies should be corrected by the administration of fat soluble vitamins A, K and D and the water soluble vitamins C and P.

Orally administered bile preparations are used to facilitate the absorption of fat soluble vitamins.

THERAPY IN PNEUMONIA*

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William Osler, in the first edition of his well-known "Principles and Practice of Medicine" published in 1892 remarks that, "Pneumonia is one of the most fatal of acute diseases. Hospital statistics show that the mortality ranges from twenty to forty per cent." In the sixth edition of the work, published in 1907, the edition I used as a student, Osler notes, that, "Pneumonia has become the 'Captain of the Men of Death,' to use the phrase applied by John Bunyan to consumption." He continues, "Pneumonia is the most fatal of all acute diseases, killing more than diphtheria, and outranking even consumption as a cause of death. The mortality at the Johns Hopkins Hospital has been about twenty-five per cent in the whites, and thirty per cent in the colored."

Subsequent editions of Osler's "Practice of Medicine" continue to stress the gloomy prognosis of lobar pneumonia. Thus the eleventh edition revised by McCrae and published in 1930, states that, "In American the mortality appears to be increasing . . . Between the ages of twenty-one and thirty the mortality is about twenty per cent; between the ages of thirty-one and forty, thirty per cent; and then after each decade it rises, until above the age of sixty more than one-half die." The last edition of Osler's "Practice," revised by Christian and published in 1938, gives the same mortality statistics and an additional mortality table in which the cases are divided according to the type of pneumococcus present, shows a mortality of nearly twenty-seven per cent. Carefully compiled mortality statistics from various parts of the world show that over the period of a century the mortality from lobar pneumonia has varied from twenty per cent to thirty per cent and that these figures remained stationary during this period despite the various attempts to improve this mortality rate.

If the mortality in lobar pneumonia remained unchanged for a century, it should not be thought for a moment that the physician was idly sitting by merely watching his patient die or only hoping for his recovery. Quite the contrary. The medical literature of this century is filled with accounts of specific treatment and cures for lobar pneumonia. Their number is almost legion. It reminds one of the remark of Lassar, made in 1905, that, "One hundred and twenty-five causes of syphilis have been established during the last twenty-five years." Some of these suggested methods of therapy had perhaps a certain value; others were worthless and still others apparently harmful.

Roche, in 1927, thought he had a specific treatment for lobar pneumonia. His treatment consisted of thyroid extract and potassium permanganate, the latter injected subcutaneously in doses of 100 c.c. of 0.1 per cent solution. He reported five cases with recovery and then disappears from the literature. Hoppe, Goldsmith and Freeman, in 1926, published a paper with the title, "The truth about mercurochrome used in the treatment of pneumonia in children." They treated ninety cases with mercurochrome and employed ninety cases as controls. In lobar pneumonia, the mortality in the control group was ten per cent, in the mercurochrome treated group five per cent; while in bronchopneumonia, the figures were forty-two per cent for the control group and ten per cent for the cases treated with mercurochrome. Other observers did not report the same experience with mercurochrome and it presently dropped out of the therapeutic armentarium. Grant, Mulberry, and Weaver, in 1926, reported on sodium citrate in the treatment of pneumonia. They gave their patients forty grains of sodium citrate every two hours, and conclude, "In lobar pneumonia, it is almost specific. No comparable results have been obtained by any other method." This method of treatment did not, however, find any wide application.

Quinine has been employed in the treatment of pneumonia for more than seventy years. In recent years interest in this drug has revived. Daichowsky, in 1926, reported twenty cases treated with quinine showing a mortality of five per cent as compared with twenty per cent in his controls. Berger, in the same year, reported a mortality of three per cent in thirty-two cases treated with quinine. Similar statis-

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tics have been published by Aufrecht and Petzold, Cahn and Bronner, and by Nicolaysen.

The treatment of pneumonia with a quinine derivative—hydroxylethylapocupreine has interested several observers. Maclachlon, Johnston, Bracken and Crum treated 136 patients with this drug and studied 329 cases as controls. The mortality in the treated cases was 24.9 per cent as compared with fifty per cent in the controls. Their observations cover the years 1935-1938, and the mortality seems unusually high.

On reviewing the literature on the treatment of pneumonia with quinine and quinine derivatives, one obtains the impression that these drugs do have a favorable influence on the course of the disease.

The use of oxygen in the treatment of pneumonia has been a much debated topic for the past ten years. With the great improvements in the methods of administering oxygen, the profession has been extensively circularized by the firms who manufacture this apparatus, which is often quite fascinating in appearance. It has also become quite well-known to the lay public, which has also been so impressed that the doctor treating a patient with pneumonia is afraid that he may be accused of negligence if he does not employ oxygen.

The literature on this subject is largely couched in generalities. It is difficult to prove its value. However, no one denies the remarkable effect of oxygen in cases of heart failure or its effect upon the cyanosis of pneumonia. Our practice has been to employ it in cases of pneumonia showing cardiac distress, or cyanosis. Anoxemia results from a lack of oxygen and anoxyemia produces cyanosis. It certainly would seem rational to give oxygen when there is a lack of oxygen.

The employment of digitalis in the treatment of pneumonia precipitated a controversy, the echoes of which are still with us. A. E. Cohn, in 1917, stated that "digitalis did not harm and might be life saving," and reported that all pneumonia patients at the hospital of the Rockefeller Institute were given digitalis as a routine. This practice was soon introduced into the hospitals of New York City, and from there spread throughout the country.

Shepherd and Steinberg, in 1924, reported that "Digitalis may be used in massive doses without much danger of a toxemia," and that "massive doses of digitalis are helpful in pneumonia and favorably modify the course of the disease." Many similar reports soon appeared in the literature.

There were, however, certain skeptics. Niles and Wycoff in 1927 formed a committee to study the effects of digitalis in pneumonia. In 1930, they published their report, which showed that the mortality in 338 digitalis treated cases was 41.4 per cent, as compared with 33.7 per cent in 404 patients who received no digitalis. While making due allowance for statistical errors, these figures at least fail to prove that the routine use of digitalis has a beneficial effect on pneumonia. Personally, we agree with Arnett, that "the routine use of digitalis in pneumonia is unwise" although we should not deny it to patients with cardiac failure or fibrillation, and should not expect the same results from it as in cardiac patients with no pneumonia.

In this controversy over digitalis, medical history again repeats itself. During the nineteenth century, the routine administration of digitalis in pneumonia was extensively studied in Germany. In 1899 Aufrecht stated that he had abandoned the routine use of digitalis because of toxic effects observed.

Those of us who had an opportunity of seeing and treating pneumonia in the army during the World War will recall the high hopes aroused then by the anti-pneumonic sera used on a large scale in the various army hospitals. I remember well a conversation I had in 1918 with a hard-boiled major in the medical corps. This officer had visited many base hospitals and seen much of pneumonia. When he visited us, we were working day and night typing patients' sputum and then dashing off to the hospital with supplies of the serum indicated.

"You fellows are doing a good work," he commented, puffing away at his pipe. "It's a fine thing to be busy, it keeps a fellow out of trouble. But as for this antipneumococcic serum, it's the bunk."

I started to argue with him that the antipneumococcic serum had reduced the mortality from twenty-five per cent to seven per cent at Camp Grant. "I know all about that," he answered, "I just came from Camp Grant." As I had not been to Camp Grant, I said nothing, but continued typing pneumococci.

Soon after the war, Dr. E. A. Locke, at the Boston City Hospital, undertook a study of the effectiveness of antipneumococcic serum. His results are shown in Table I

Henry M. Thomas, in 1923, published the following table. (Table 2.)

From this table, we note that only in pneumonia caused by Group I pneumococcus and treated with Group I antipneumococcus serum, is there any very suggestive evidence of the therapeutic effect. The experience of the past seventeen years has agreed in the main with the conclusions of Thomas.

The mortality picture which had changed but little for a century, with the probable exception of that for Group I pneumonia, seems not to be changing. This new development which began in 1933

is an absorbing story, a drama which is still unrolling before our eyes.

On the seventeenth of May, 1933, Dr. Foerster read before the Düsseldorf Dermatological Society a paper with the title, "Sepsis following an extensive periporitis. Cure with Streptozon."

Foerster reported, "It was a boy, age ten months. Three months previously, a periporitis appeared which continually spread. In addition, septic complications appeared. Blood culture positive for staphylococci. His general condition grew steadily worse. All therapeutic efforts were fruitless. The child was on the verge of death. A trial with Streptozon, one-half tablet twice daily by mouth, produced an astonishing change. After treatment for four days, the temperature fell gradually to normal. He slowly gained weight. The hemoglobin rose from twenty-two per cent to forty-two per cent. General condition good. The preparation was administered, with brief intermissions, for three weeks."

In discussing this case, Dr. H. T. Schreus remarked, "The preparation Streptozon was given me by the I. G. Farbenindustrie by chance at the very moment when the child was almost dead. The immediate effect is all the more remarkable, since this was a staphylococcus infection, while Streptozon was recommended as effective only against streptococci."

"There brief remarks," as Perrin Long has written, "introduced the world the chemotherapeutic agent which was soon to be known as "Prontosil" and which, in the opinion of many observers, constitutes the greatest therapeutic discovery in modern medicine. It is also of interest to note in this brief report that although the substance by label was indicated as a remedy against streptococcal infection, its first reported use was in a staphylococcal infection. In retrospect, this fact might be prophetic of the manner in which Prontosil and allied chemotherapeutic agents were used in the next few years."

The story of the development of prontosil is not without interest. In 1908, Gelmo, a German chemist, synthesized para amido benzene sulfonamide, or sulfanilamide. The following year, chemists associated with the I. G. Farbenindustrie developed a series of dyes with sulfonamide and substituted sulfonamide groups. These dyes were designed for textile purposes and many of them were used in the trade. Five years later, in 1914, several observers noted that some of these dyes were highly bactericidal in test tube experiments. Further study at this time was interrupted by the World War.

The patent for prontosil was granted by the German Patent Office in 1932, although its basic form had been patented as early as 1920. In 1933, the first clinical report, which I have read, appeared in the literature. The following year, 1934, two articles by Grütz and by Veil appeared, and in 1935, Gerhard Domagk's classic paper, "Ein Beitrag zur Chemotherapie der bakteriellen Infektionen" (A Contribution to the chemotherapy of bacterial infections) appeared in the Deutsche Medizinische Wochenschrift. Domagk's work was entirely experimental and his observations date from 1932. He stated simply that prontosil, a relatively nontoxic dye, protected mice from a fatal hemolytic streptococcal infection, and cured hemolytic streptococcal and staphylococcal infections in rabbits. Domagk also stated that prontosil had no bactericidal action in the test tube, but "acts as a true chemotherapeutic agent only in the living animal." In the same issue of the Deutsche Medizinische Wochenscrift were three clinical reports describing excellent results with prontosil in the treatment of hemolytic streptococcal angina, thrombophlebitis, erysipelas, infected abortions, acute arthritis, otitis media, and in infections of the urinary tract caused by the colon bacillus.

These reports impressed the English and French. As Lawrence P. Garrod remarked in his paper in the Lancet, "The early reports, such as those of Foerster and Grütz, might have indicated to anyone with a careful eye on the German literature that something new was brewing." The same year that Domagk's paper appeared, Prof. Fourneau prepared a hydrochloride of sulfanilamide which French observers claim was as effective as prontosil.

This momentous work with prontosil attracted little attention in this country for some time. To quote Long, "One can search volumes 105 and 106 (1935) of the Journal of the American Medical Association without finding any reference to the investigations being carried out in Germany and France. The noted number of the Deutsche Medizinische Wochenscrift which contained the original reports of Domagk and his collaborators was not even mentioned in the abstract section of the Journal, nor did these extraordinary reports impress the 'Berlin Correspondent,' as there is no mention of the newer chemotherapy in his weekly dispatches. The first mention of the compounds in the Journal was an abstract of Meyer-Heine and Huguenin's paper from La Presse Médicale, and is to be found on page 2113 of the June thirteenth issue of the Journal of the American Medical Association in 1936."

Public interest in the new drug was stimulated in this country by press reports that President Roosevelt's son, who was suffering from a streptococcic sore throat was snatched from the jaws of death through the use of the new powerful German remedy—prontosil. If our interest lagged at first, we

soon made handsome amends. In the year 1938 American firms alone produced more than seventy-six tons of 152,000 pounds of sulfanilamide compounds, enough to treat at least 175,000 people for ten days. Every magazine editor, newspaper publisher and reporter, every high school teacher and almost every child in the public school in the third grade and above has heard that magic word—sulfanilamide.

The spectacular results obtained with sulfanilamide in streptococcal infections suggested at once its employment in pneumonia. Soon articles appeared in the European and American medical literature describing the favorable therapeutic effect of sulfanilamide in pneumonia. Louis reported six cases of lobar pneumonia treated with sulfanilamide, all recovered. Heintzelman, Hadley and Mellon reported nine cases of type three pneumonia treated with sulfanilamide and ten control cases. The mortality of the untreated cases was seventy-four per cent, for the treated cases twenty per cent. Sadusk reported nine cases of pneumonia due to the pneumonococcus type three, treated with sulfanilamide. All recovered. These results were spectacular since the average mortality for type three pneumonococcus pneumonia exceeds forty per cent.

The spectacular results obtained with prontosil and sulfanilamide were the signal for intensive investigations upon various compounds which could be formed from sulfanilamide. The year after prontosil was placed on the market, the I. G. Farbenindustrie announced that they had synthesized 1000 derivatives of sulfanilamide. Laboratories all over the world took up the problem and today some 4000 odd derivatives have been synthesized. Only a fraction of this number have been studied in the laboratory and in the clinic, but already some very interesting and promising compounds have been developed.

One of the best-known of these derivatives is sulfapyridine. This drug was apparently first manufactured by May and Baker, and called, " M & B 693." Shortly afterwards it appeared in France under the name of "Dagenan," and in Germany, with the name of "Eubasin." This compound was introduced for the treatment of pneumonia.

It is interesting to compare the table of Thomas (Table 2) with the results obtained by Evans and Gaisford, who published the first clinical report on the use of sulfapyridine in pneumonia. In this article, which appeared in the Lancet, July 2, 1938, they reported one hundred cases which had received the drug. The treated cases showed a mortality of eight per cent, the untreated cases a mortality of twenty-seven per cent.

This report was followed by numerous reports in the literature all showing that this drug apparently reduced the mortality in pneumonia. In the January twelfth issue of the Deutsche Medizinische Wochenscrift, 1940, (Table 3), Wurm of Freiburg has collected some interesting statistics on the effectiveness of sulfapyridine on pneumonia. He has collected 2156 cases of pneumonia treated with sulfapyridine showing a mortality of 6.4 per cent, while 1676 untreated cases had a mortality of 17.8 per cent—nearly three times as great.

We began treating pneumonia with sulfapyridine in 1938 and, while our experience is quite limited as compared with the large numbers I have just quoted, our results have convinced us that sulfapyridine is a therapeutic agent of great value in pneumonia.

One of the interesting properties of sulfapyridine is its anti-pyretic effect. Aside from its bactericidal effects, it produces also a fall in temperature. This may or may not coincide with its specific effect upon the infection.

Long has stated that several of his patients developed hematuria in the course of sulfapyridine therapy. There are several similar reports from other observers and we have seen one such complication. The hematuria is caused by the formation of acetylsulfapyridine calculi in the renal tubules and pelvis. If hematuria develops, the drug should be discontinued. It has been suggested that the routine administration of sodium bicarbonate will alkalinize the urine and prevent the formation of calculi. This complication is, however, relatively rare, and there is, as yet, no positive proof that sodium bicarbonate will prevent it.

The most annoying and most common complication of sulfapyridine therapy is nausea, often with vomiting and hiccoughing. Large doses of bromides or barbiturates have been employed, but the most effective drug for this complication, in our experience, is nicotinic acid. We usually employ fifty to 100 mg. by mouth three or four times daily.

In many patients, the nausea may make it impossible for the patient to take tablets of sulfapyridine by mouth. In such instances, we employ fifty c.c. of a five per cent solution of the sodium salt intravenously two to three times daily, and have also used thirty per cent solutions intramuscularly in doses of five c.c. or more.

Within the past year, another compound has been synthesized. This compound is sulfathiazole, which gives promise of being even more valuable than sulfapyridine. Sulfathiazole was described in 1939, by Fosbinder and Walter, and by Lott and Bergeim in papers published in the Journal of the American Chemical Society. About the same time, a similar compound, sulfamethylthiazole, appeared. These two

compounds are now undergoing extensive clinical trial.

Extensive laboratory tests by McKee and coworkers indicate that sulfathiazole is quite as effective as sulfapyridine, against the pneumococcus meningococcus and hemolytic streptococcus, while it is more effective than sulfapyridine in staphylococcal infections.

As yet, we must await clinical testing before we can draw final conclusions regarding the effectiveness of sulfathiazole as compared with sulfapyridine. From reports now available, it appears to be just as effective, and, according to many men, successful. Our own experience with it has been very limited. We have, however, treated ten cases of pneumonia with sulfathiazole without a death. Dr. Blake at New Haven tells me that he has had 100 cases of pneumonia treated with sulfathiazole with a mortality of only three per cent, and he adds that these three were elderly patients. Although our experience with sulfathiazole has been limited, we have been impressed with the fact that it only rarely produces that disagreeable feature which complicates the use of sulfapyridine—nausea and vomiting. With sulfapyridine, nausea and vomiting are almost the rule if medication is prolonged; with sulfathiazole, they rarely occur.

These achievements in the therapy of pneumonia are certainly impressive, and incline us to agree with the statement previously quoted, that the introduction of prontosil which started us on this remarkable course, "constitutes the greatest therapeutic discovery in modern medicine." And the final chapter has not been written. We have probably only completed the preface.

TABLE I

MORTALITY, RATE, 145 TREATED: SEVENTY-ONE CONTROL CASES (BOSTON CITY HOSPITAL)

	Number Cases	Number Deaths	Mortality Per cent
Group A	75	13	17.3
Group B	70	12	17.1
Totals	145	25	17.2
Control Group B	71	12	16.9

TABLE II

COMPARISON OF DEATH-RATE IN TREATED AND CONTROL SERIES

Antibody Wards:

Type	Cases	Deaths	Rate Per Cent
Pn. I	158	21	13.3
Pn. II	83	23	27.7
Pn. III	73	29	39.7
Pn. IV	110	18	16.4
Total	424	91	21.4
Strept., etc.	48	24	50.0
Unclass.	36	14	38.8
Grand Total	508	129	25.3

Control Wards:

Type	Cases	Deaths	Rate Per Cent
Pn. I	162	36	22.2
Pn. II	67	27	40.3
Pn. III	60	24	40.0
Pn. IV	121	29	24.0
Total	410	116	28.3
Strept., etc.	35	12	34.3
Unclass.	47	20	42.5
Grand Total	492	148	30.0

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TABLE III

Authors	Cases treated with Sulfapyridine: Total No.	Died	Per Cent	Cases not treated with Sulfapyridine: Total No.	Died	Per Cent
Evans and Gaisford	100	8	8	100	27	27
Gaisford	about 700	.....	8	335	.....	23,6
Pepper, Flippin, Schwartz and Lockwood	400	28	7	.....	.....	.....
Agranat, Dreosti, Ordmann—I	27	2	7,4	27	6	22,2
IIa	156	1	0,6	157	5	3,2
IIb	71	6	8,5	86	16	18,6
Graham Warner, Dauphinee and Dickson	50	3	6	with serum 50	6	12
				without serum 30	7	23
Smith and Needles	70	6	8,5	678	.....	37
Anderson and Dowdeswell	50	1	2	50	8	16
Meakins and Hanson	30	1	3	.....	.....	.....
Hegler	90	4	4,4	243	72	30
Riehm	36	4	11	.....	.....	.....
Löffler, Hegglin and Maier	34	3	9	.....	.....	.....
Römcke and Voigt	342	.....	5,8	.....	.....	.....

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PARTIAL SPONTANEOUS PNEUMOTHORAX

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Spontaneous pneumothorax as an unqualified term has probably been known or at least suspected from the beginning of recorded medicine. Hippocrates gives a rather complete description of the succussion splash which remains as one of the signs of value in diagnosing this condition with its accompanying pleural effusion. In 1803 Itard[1] used the term pneumothorax in designating the existence of air in the pleural cavity and recognized its relation to tuberculosis. Laennec[2], in 1819, gave a thorough description of the symptoms and physical signs of pneumothorax which has been but little improved upon up to the present time.

Due to the lack of controlled studies on numerous large groups of individuals, the exact incidence of this disease process is uncertain. Nevertheless it is apparent that partial spontaneous pneumothorax is prone to occur in the age group of twenty to thirty. Furthermore the true incidence is difficult to determine because of the well established fact that the condition usually occurs with little or no symptoms and the potential patient may disregard its onset and course without seeking the counsel of a physician. Blackford[3] has conducted an interesting study on college students in which he observed fifteen cases, eleven of which occurred within five years in a student body of 2500; this is an incidence of approximately one case per thousand students in each school year. He also reports on Wilson's[4] study of Yale students in which the latter found five cases of silent pneumothorax in routine chest roentgenograms, these cases were all without symptoms. Many of the other reports in the literature concern themselves solely with those cases occurring in the newborn and in infants.

In considering the etiology of this condition we can usually place the precipitating factor in one of the following three classes:

I. Mechanical
II. Infectious
III. Congenital defect of the lung

These are the etiological agents in those cases which have been proven by autopsy; obviously there still remains the group which we are forced to refer to as idiopathic, however, it seems entirely logical that these too can be placed in one of the above three classes.

Etiology has been established in case reports by: Hayes[5] who gives a resume of six cases all of which were tubercular in origin but only one of which could be termed partial pneumothorax. His contention is that all cases of spontaneous pneumothorax have a tubercular etiology even though the lung involvement is of a minimal degree.

Silver[6] presents a case which gives roentgenological evidence of emphysema of the right lung from mechanical obstruction of the right bronchus prior to rupture of the pleura and resulting spontaneous pneumothorax.

Gasul and Singer[7] report a case of bronchopneumonia which progressed to suppuration and rupture of the softened focus permitting the escape of air into the pleural cavity.

Weiner[8] cites the case of a child of four and one-half months with a partial pneumothorax of three months duration which at autopsy was found to have a communication between a branch of the upper part of the left bronchus and the pleural cavity.

Donahoe[9] adds these factors as etiological agents in children:

1. Injury by foreign bodies in a bronchus
2. Rupture of inflammatory area
3. Tuberculosis
4. Rupture of alveoli following effort of inspiration when air passages are blocked by amniotic fluid
5. An abscess of bronchi or lung
6. As a complication of pertussis, pneumonia or empyema.

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Hotz[10] reports an interesting case of a girl five days old with a partial pneumothorax on the right side. At the age of twelve days the right side was normal but there was a pneumothorax on the left side. The child had a large thymus gland which increased the dyspnea and may have been the etiological factor. He points out that constantly increasing intra-alveolar tension results in stretching of the lung tissue with final rupture, the latter occurs near the free margin of the lung and may be easily overlooked at the autopsy table.

Other etiological factors to be considered are rupture of any emphysematous bleb, cyst of the lung near its periphery, tearing of the pleura by adhesions when there are abnormal lung excursions as in sneezing, coughing or violent excursions of the lung following strenuous exercise; or a solitary air vesicle with a valve-like arrangement in its base which would permit gradual distention and finally rupture.

A theory has been advanced in regard to the etiology in children which may also be applicable to adults, i. e., that the three lobed right lung has a larger factor of safety than the two lobed left lung, also that the large right lobe of the liver may offer a certain amount of protection to the right lung.

Charr[11] reports a study of ten cases of spontaneous pneumothorax having a fatal termination, eight of these had pulmonary tuberculosis and two had anthracosilicosis. Seven of the cases had rupture of the visceral pleura in the midaxillary line, the other three cases had ruptured on the anterior surface of the lung. His observation in explanation of this is that the anterior and axillary portions of the thorax move more than the posterior portions where the ribs are attached to the vertebrae. He further states that the left side is more frequently involved than the right probably because the heart action produces an additional pulmonary mobility on the left side. As previously stated the underlying pathology is often indefinite, however, the findings are more or less constant following the onset of symptoms. There is air in the pleural cavity, a variable amount of fluid in the corresponding costophrenic angle, and a partially or completely collapsed lung. If air alone escapes into the pleural cavity the pleura shows no pathologic changes with the exception of the rent or tear in the visceral pleura. The involved[12] lung becomes more or less atelectatic and if the condition persists over a long period, fibrosis occurs and the lung may remain permanently incapable of reexpansion. To a large extent the degree of pneumothorax is determined by the size of the opening in the pleura and the underlying lesion, however, in those cases which occur secondarily to chronic disease, the extent of the pneumothorax may be limited by pleuritic adhesions. If the pleural opening is valve-like permitting the continued escape of air into the pleural cavity a so-called "high tension pneumothorax" occurs in which the normally negative pleural pressure is changed to a positive pressure.

The characteristic of the symptoms is their sudden onset with no apparent reason, the sudden sharp pain usually associated with the onset is due[13] to air suddenly rushing into the pleural cavity where there is a negative pressure. The pain[2] is usually felt in the midaxillary region but may be referred to the scapula or beneath clavicle. The pain is usually more severe on deep inspiration. The intensity of the pain may increase for several hours but usually begins to subside within a short time after the onset. It may persist in a mild form as long as there is any residuum of the pneumothorax as in one of our cases in which the pain persisted in a mild form for approximately one month following the onset. Horine[14] reports three cases, two of which were partial pneumothoraces of the left side. The interesting observation on these cases was that all presented symptoms referable to the heart, the first case presenting a history of sudden pain in the precordium which was transmitted to the left shoulder. All three had the following symptoms in common; heart consciousness, dyspnea, and pain in the chest. Other symptoms usually related are shortness of breath, this is of variable degree, depending on the extent of the collapse and may be of sufficient severity to indicate aspiration of the encased air. Mental distress is of practically no consequence in the symptomatology of partial collapse of the lung.

The physical signs of partial spontaneous pneumothorax are somewhat bizarre as compared to the more definite signs of complete pneumothorax. There is rarely any widening of the intercostal spaces. If there is a thirty per cent (or more) collapse of one entire lung the heart is displaced toward the opposite side and its impulse is seen in a new position. Tactile fremitus[2] on the affected side, if felt at all, is indistinct, in the majority of cases it is absent. Percussion will usually reveal a degree of hyperresonance, the degree depending on the amount of collapse of the affected lung. Auscultation reveals the breath sounds as indistinct or entirely absent. A positive coin sound is an aid when present but can rarely be elicited in partial pneumothorax. If sufficient pleural effusion is present the pathognomonic succussion splash can be heard on shaking the patient.

An accurate diagnosis is possible in partial pneumothorax only when a satisfactory roentgen - ray examination has been made with careful inspection of the plate. This point is well taken in the carefully

reported case of Weil, Ourmansky and Dreyfus[15] in which the usual physical signs were entirely absent. Incidentally this patient had a recurrent pneumothorax on the day of discharge from the hospital, the second attack resulting in a complete collapse of the lung on the affected side. The x-ray is rather characteristic in these cases revealing a partial collapse of the lung, pleural effusion, and a zone of abnormal clearness surrounding the affected lung. This zone is frequently of the mantle or "cloak" variety in which the involvement is primarily of the apex and surrounds the lung with the exception of the base. If a fluoroscopic examination is made the so-called "paradoxical contraction of the diaphragm" may be observed. However, in those cases having only a small degree of collapse with a narrow zone of air in the surrounding pleural cavity the diagnosis can be more accurately determined on an x-ray plate. Vinson[16] states that pneumothorax may be overlooked in cases of bronchoscopic aspiration unless x-ray examination is made following the aspiration as the coughing and straining associated with this procedure may result in the rupture of the visceral pleura.

The prognosis of nontubercular partial spontaneous pneumothorax is excellent. Obviously the smaller the degree of pneumothorax the shorter will be the convalescent period. Some of the cases will have recurrent attacks, as did two of our cases, although these are usually not of a serious nature. Further, the pneumothorax may persist over an indefinite period as did the case of Willi[17] and that of Deglos[18].

The treatment can be divided into conservative and operative. The former is the treatment of choice and is largely symptomatic. Rest in bed, at least until the acute symptoms subside, and the pain controlled by barbiturates or morphine. The affected side may be immobilized by adhesive strapping and deep inspiration and coughing discouraged. Under operative treatment the only procedure of any value is the aspiration of air from the pleural cavity. This is the treatment recommended by Glaser and Landau[19] for infants. However, in those cases of partial pneumothorax in adults, we believe aspiration should be confined to those cases with a high-tension pneumothorax or to those in which there has been no appreciable re-expansion after two weeks and to those cases exhibiting respiratory or circulatory embarrassment.

A REPORT OF FOUR CASES

Two With Recurrence

CASE I. L. M., male, age twenty-three, gave history of recurrent attacks of pain in upper left chest and left axillary region from the age of fifteen years, these were related to have a variable duration from a few hours to a week. In October, 1936, a diagnosis of pleurisy was made and the chest was strapped with adhesive, following this procedure he experienced symptomatic relief in one week. He had recurrent pain in left chest posteriorly in March, 1937, at that time x-ray of the chest revealed a partial collapse of the left upper lobe. Mantoux test, (P. P. D. No. II), gave a one plus reaction at this time. Roentgenograms in April, 1937, and in August, 1938, revealed no evidence of pneumothorax. On February 2, 1940, the patient gave a history of pain in the left lower chest which had appeared three weeks previously while he was walking across a room. Three days later the pain had subsided, however, two days later while chopping wood the patient again experienced a sudden severe sharp pain in left lower chest, the pain was exaggerated on deep inspiration and on walking. At the end of two weeks he had obtained no definite relief and came in for examination. Physical examination of the chest revealed hyperresonance infra-clavicularly on the left side and an absence of breath sounds in the axillary line of the chest. There was a positive coin sound over the left lateral portion of the chest, no positive succussion splash could be elicited. X-ray examination (Fig. 1) demonstrated approximately a fifty per cent collapse of the left lung with the collapse being complete from apex to base, the heart and mediastinal structures were apparently displaced to the right. There was a small amount of fluid in the left costophrenic angle. No pathology was observed to account for the collapse. On February 19, 1940, another x-ray plate (Fig. 2) showed that there was a persistent narrow zone of pneumothorax in the upper left lateral chest, and the heart and mediastinal structures were two cms. to the left of their position on the previous graph. The patient was symptom free on March 1, 1940.

CASE II. W. G., male, age twenty, appeared on November 24, 1939, complaining of dull pain beneath the left scapula which had begun suddenly the evening before following a run of eight to ten blocks. He stated that the pain was more severe on deep inspiration and on walking. Physical examination of the left chest revealed only distant, indistinct breath and voice sounds infra-clavicularly and in the left upper axillary line. Roentgenogram of chest (Fig. 3) revealed a partial collapse of the entire left lung with a zone of pneumothorax from one to two inches wide from apex to base (this type is sometimes referred to as mantle pneumothorax). No intrinsic lung pathology could be visualized. On December 4, 1939, reexamination of the chest demonstrated reexpansion of the left upper lobe but approximately the same degree of collapse of the lower lobe. A small amount of fluid persisted in the left costophrenic angle. On December 18, 1939, the pneumothorax had completely disappeared (Fig. 4), the costophrenic angles and the lung fields were clear. Reexamination on March 4, 1940, demonstrated the continued complete expansion of the left lung and the lung fields were clear. (This patient had a one plus reaction to a Mantoux (P. P. D. No. I) test on September 18, 1937. X-ray examination at that time had shown calcification in each hilum with a Gohn complex near the right base.)

CASE III. E. C. B., male, age nineteen, came in on January 4, 1938, because of transitory pains in left chest and in left shoulder. Occasionally noticed pain on

walking and had a slight cough which was nonproductive. The only physical sign was hyperresonance in left axilla. X-ray revealed a partial pneumothorax of the left lung varying from 1.5 inches in width at the apex to 0.5 inches in width near the base. Mantoux test was negative. Reexamination on January 25, 1938, showed complete reexpansion. On February 14, 1938, he had gradual onset of pain in the left chest with symptoms subsiding on February 17, 1938. X-ray demonstrated a recurrent pneumothorax on the left side which was a little larger than that of the previous illness. Another roentgenogram taken on March 17, 1938, revealed complete reexpansion with no intrinsic lung pathology.

CASE IV. H. M., male, age twenty-one, reported September 21, 1937, with a history of sudden onset of pain in left chest the preceding day while walking. Pain radiated to left shoulder and was more intense on deep inspiration. He had no cough or dyspnea. On physical examination there was slight limitation of motion on the left side, there was hyperresonance supra-clavicularly and breath sounds were diminished in the left axilla. Patient had a one plus Mantoux test. X-ray examination of the chest revealed a partial pneumothorax involving the left apex. Patient was symptom free on September 24, 1937, and the

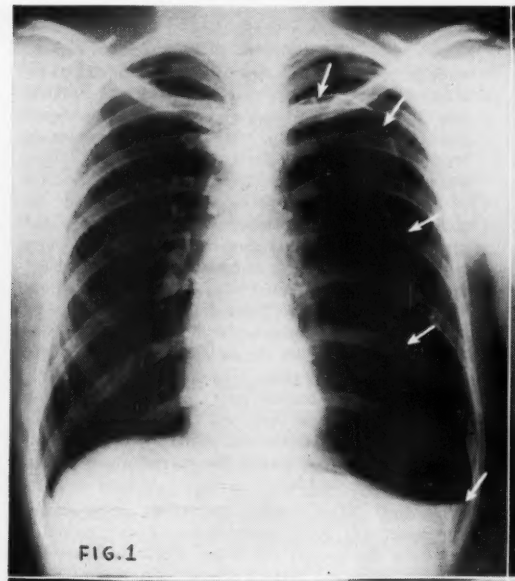

FIG. 1

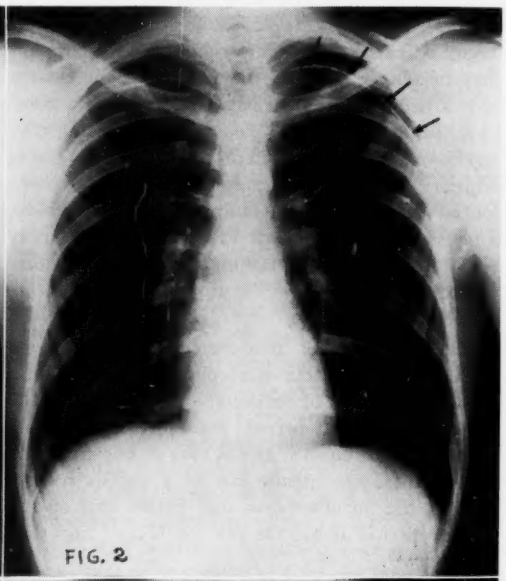

FIG. 2

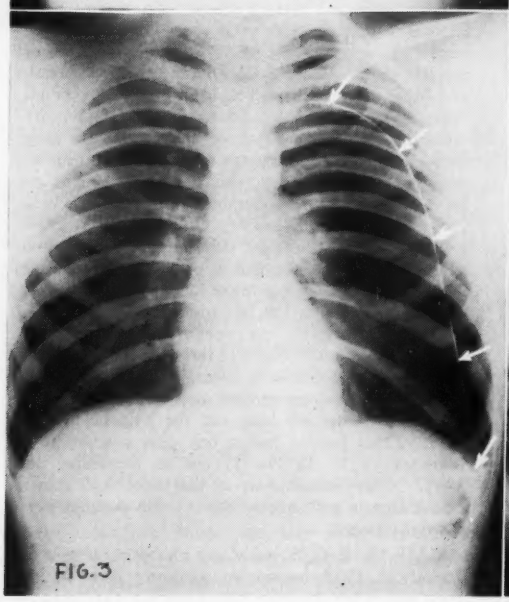

FIG. 3

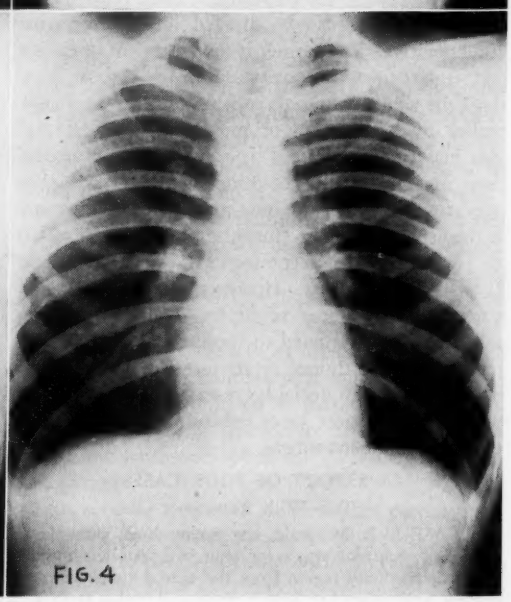

FIG. 4

following day a second roentgenogram of the chest was made which showed complete reexpansion with slight calcification in the left hilum.

All of the above four patients were of the same general body build being of the linear type.

SUMMARY

A partial review of the literature concerning cases of spontaneous pneumothorax with particular emphasis on those cases of partial degree has been made along with a report of four cases of partial spontaneous pneumothorax two of which had recurrences.

CONCLUSION

1. Partial spontaneous pneumothorax can be readily overlooked unless roentgenograms of all suspected cases are taken.

2. Since practically all of these cases recover a definite etiological factor is difficult to determine.

3. Symptoms and signs are inconstant although diminished tactile fremitus and breath sounds along with localized hyperresonance are the most constant physical sign.

4. Accurate diagnosis is entirely dependent on x-ray examination.

5. All of our cases and approximately seventy to seventy-five per cent of those reported are in males.

6. Our four cases and sixty-five to seventy-five per cent of those in the literature occurred on the left side.

7. Treatment is symptomatic and should primarily be conservative.

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THE MEDICAL MANAGEMENT OF URINARY INFECTION IN PREGNANCY

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Considering the frequency with which deviations from normal are found in the urine of pregnant women, it is surprising how seldom complications appear that require urological intervention. Nevertheless, urologists are interested in this problem as it relates to the most common lesion of the genito-urinary tract, namely pyelonephritis. In fact, next to respiratory infection, pyelonephritis is probably more common than infection in any other field.

Before going further, we should have a clear understanding of the term pyelonephritis. Pyelonephritis, or pyelitis as it is commonly referred to, is generally recognized as a lesion predominating in the central portion of the kidney. The path of infection usually ascends, by way of the ureters and lymphatics, from the lower urinary tract and the pelvis.

There are two major forms of pyelonephritis, the complicated and the uncomplicated. Of these there are three clinical phases to consider, namely; the acute, the recurring, and the chronic form.

Acute pyelonephritis occurs quite frequently in the female, due to the susceptibility of the urinary tract to ascending infection. There is little doubt that the infecting organisms in the female ascends through the urethra much more frequently than is generally recognized. Most cases of acute pyelonephritis are of short duration and are self limiting. Natural resistance is sufficient in many instances to overcome the infection. However, if the infection persists longer than four or five days, accompanied by fever and chills, nature should be aided by administration of any of the various chemotherapeutic preparations that have proven beneficial in such cases.

Recurring pyelonephritis is characterized by repeated attacks of acute pyelonephritis. The periods of infection may last over several weeks or months and recur after a variable lapse of time. Although the patient may be free of symptoms during such intervals, careful examination of the urine will often show the presence of bacteria, indicating that the kidney infection is dormant rather than eliminated.

The third form or the chronic pyelonephritis is the most difficult to overcome of the three. Pyelonephritis is usually classed as chronic if the infection persists over a period of a year in spite of treatment.

Unless complications occur with this type, patients usually suffer only from frequency and painful urination and in many cases become accustomed to it. In countless cases such complaints of the irritable bladder will be associated with the chronic form of pyelonephritis.

What has been said concerning the prevalance of bacteria and urinary infection in the female makes it doubly important that we consider this condition in case of pregnancy where so many other factors develop that favor ascending infection. In pregnancy there are variable changes in the resistance of body tissues to infection. At an early stage of gestation, in practically every case of pregnancy, there is loss of tone with dilation and tortuosity of the ureter which may disturb peristaltsis and promote stagnation of urinary elimination. And too, intrapelvic pressure and circulatory changes in the pelvis may favor the ascension of infection by way of the ureters and lymphatics.

Since objective changes are present that favor the spread of infection, at such an early stage, in the urinary tract of practically every case of pregnancy, and with a realization of the potential dangers that attend such infections, it would appear that we should place more emphasis upon the control of bacteria in the urine to prevent the development of complications.

In view of the fact that the success of therapy in these cases is dependent upon an early recognition of the infection and application of sound therapeutic measures, we should pause to consider the revolutionary advances that have taken place in the field of chemotherapy during the past few years. It would appear that necessity has made bacteriologists out of those who attend confinement cases. Or, stated more accurately perhaps, such advancements have opened a new field of urological bacteriology. If there is any on thing that has been learned in the development of modern therapy of urinary infection, it is the necessity of a working knowledge of bacteriology.

For general purposes, however, it is necessary to be familiar with only a few simple observations in bacteriology. The two main types of bacteria can be recognized easily without elaborate laboratory facilities. For practical purposes the simple methylene blue or grams iodine stain of the dried urinary sediment may be sufficient. Microscopic examination will readily determine the presence of cocci or bacilli and likewise whether they are gram negative or gram positive.

Although gram negative bacilli are most commonly observed in cases of pyelonephritis, any type of bacteria may be present and in many cases the bacteria are mixed. When it is desirable to make further identification of the various bacteria, culture studies may be made from the urinary sediment. Of the bacilli group, the three which occur most frequently and have the greatest clinical significance are the colon bacillus, the bacillus aerogenes, and the bacillus proteus. It is highly desirable to distinguish the proteus bacillus because it splits urea, causes alkaline urine, and is often very hard to eliminate. Of the cocci group, gram positive cocci are the most frequent. Staphylo-cocci are seen more frequently than streptococci.

It should be remembered, in cases that have been under treatment, the disappearance of symptoms and absence of pus in the urine, does not mean that the infection has been completely eliminated. The persistence of gram positive or gram negative bacteria, even though the patient is symptom free and the urine is free of pus, may point to a return engagement of the infection. Treatment in these cases therefore, should be continued not only until symptoms disappear, but until after the urine has been free of bacteria for several days.

Although the management of pyelonephritis is relatively simple in a vast majority of instances it may be quite complex in some cases. This is due perhaps to the fact that we have not found, as yet, a specific urinary antiseptic for every form of infection. Certain drugs nevertheless have been perfected that merit consideration.

Before entering upon a brief discussion of some of the more popular therapeutic preparations, it may not be amiss to mention the bacterio-static effect that occurs with alkalization of the urine to a PH of 8.5, or an acidification of 4.5. Deleterious effects are commonly encountered, however, if such degree of alkalinity or acidity is maintained for a long period of time. In this connection also, ketogenic diets although seldom tolerated in these cases, produce ketosis with acidification which gives the effect of an organic acis, which effect often is of benefit in controlling bacterial infection.

Considerable emphasis has been placed on the desirability of concentrating the urinary antiseptics used in the urinary tract. In order to accomplish this, fluids are restricted quite materially for a few days. Personally, I favor an increase in the water balance of the body, to stimulate activity on the part of the sluggish and inactive kidney units, and a commensurate increase in the dose of the drug administered.

Until recently treatment of coccal infection in the urinary tract has not been nearly as efficient as directed toward the control of bacillary infection. Up to the time that sulfanilamide was introduced as a urinary antiseptic, neoarsphenamine was about

the only effective anti-coccal remedy. In my experience neoarsphenamine in doses of from 0.2 to 0.3 gms. at four to six day intervals has proven beneficial in a number of instances of coccal infection. Acidification of the urine seems to improve the results. Neoarsphenamine is not continued beyond a third injection unless improvement is evident.

In connection with bacillary infection a word should be said about the various azo dye preparations. They have had wide usage on the basis that the colon bacillus is the chief bacterial organism in the urine of pregnant women. As in the case of neoarsphenamine for coccal infection, the azo dye preparations have proven highly beneficial in certain instances of bacillary infection, although they have been equally disappointing in others.

It is impossible for such a discussion as this to give adequate consideration to the two therapeutic agents that have had such wide usage during the last four or five years, namely, mandelic acid and sulfanilamide. It will be possible only to refer to some of their more important qualities.

Mandelic acid has proven highly effective in the treatment of certain bacillary infection. It is particularly bactericidal against one member of the cocci group, namely the streptococcus faecalis. The use of mandelic acid is limited, however, even for these organisms, by reason of the fact that the urine must be highly acid. This in itself is often either objectionable or impossible to attain. In some cases mandelic acid may eliminate bacteria from the urine, when sulfanilamide or other preparations fail to do so.

Sulfanilamide has proven to be a most valuable drug in the treatment of urinary infection. It is particularily efficacious against colon bacilli and the proteus bacillus group which has been extremely difficult to eradicate. Although sulfanilamide in any of its various forms is not as efficacious against bacillary infection, more often than not it will eliminate them. It is almost entirely impotent against one member of the cocci group, namely streptococcus faecales for which it is necessary to fall back on mandelic acid therapy.

Even though a vast majority of the urinary infections of pregnancy are amenable to medical treatment, if an antiseptic cannot be administered orally, it naturally has a limited field of usefulness. Its effect when given hypodermically is not prolonged sufficiently to assure more than temporary or symptomatic alleviation. Such medication is therefore practical as a rule only for hospital patients or those who can be seen frequently. In some instances an individual may tolerate one drug as regards the gastro tract, and be unable to take another. Since both kidneys are likely to be irritable, it is dangerous to continue the use of some of the more effective urinary antiseptics, if the urine shows significant increase of albumin, casts, and blood.

The toxicity of sulfanilamide is a thing to be reckoned with in these cases, although this is not such a problem since greater refinements have been made with this drug, and since we have come to realize that large doses are not necessary in many instances of urinary infection. From forty to fifty grains daily is a sufficiently large dose to control many of the acute infections, and as little as five to fifteen grains daily may be enough to control the chronic case or prevent the recurrence of an acute pyelonephritis.

As mentioned before, infecting organisms gain entrance to the bladder through the urethra in the female, much more frequently than is generally recognized. Hundley and his associates contend that a vast majority of the organisms found in the urine of pregnant women are normal inhabitants of the labial epidermis and mucosa of the vagina. Countless women who complain of urinary frequency and irritable conditions of the bladder will be found to have evidence of infection in the urethra.

Since pyelonephritis is usually secondary to infection in the lower urinary tract and pelvis, treatment must be directed to this source. The treatment in many instances should start with the elimination of vaginal infection, chronic cervicitis and infection in the periurethral tissues. Urethritis in the female lends itself readily to dilitations and injections of mild antiseptic solutions such as argyrol, neosilvol, or weak silver nitrate.

It is essential to make differential bacterial studies for the reason that, some bacteria respond more readily to certain drugs than others. A simple methylene blue stain will serve to differentiate cocci from bacilli. The grams iodine stain can be used to identify the gram positive or gram negative organisms, and culture studies should be relied upon to determine more specific characteristics of the bacteria.

Elimination of pus from the urine and cessation of symptoms does not necessarily indicate a cure. To insure against recurrence, treatment should be continued well past the disappearance of bacteria.

Every effort should be made to stimulate and maintain normal renal function, and the maintenance of a physiological equilibrium of urinary elimination, by careful observance of the water balance of the system.

In order to attain therapeutic success the chemotherapeutic agent must be selected with precision

(Continued on Page 522)

President's Page

To the Members of The Kansas Medical Society:

Despite all imperfections, dissatisfactions and disappointments, Amercan medicine in general and Kansas medicine in particular have much to be thankful for at this festive season of the year, so much, in fact that it would seem as though some acknowledgment of our gratitude is in order.

To continue to serve the known medical needs of Kansas people in an efficient and economical manner and take an active and constructive interest in all civic affairs which directly contribute to the betterment of community life, is just one of the many ways by which we can as a profession express our gratitude for our opportunities.

Merry Christmas and may the new year be the best year Kansas medicine has ever experienced.

Sincerely,

Forrest L Loveland M.D.

President, The Kansas Medical Society.

EDITORIAL

OSTEOPATHY

To anyone familiar with the situation, one of the most amazing things about osteopathy is the confusion which exists among the members of that group concerning the nature and scope of its so-called therapy.

For example, in recent years osteopaths have consistently made irreconcilable and extensively varying claims concerning the practice of osteopathy. In certain parts of the country they have held firm to their anti-drug manipulation theory; in other places they have represented that osteopathy is manipulation with the addition of some drugs, and in still others, as has been true in Kansas, they have loudly told the legislatures, the courts, and the public that the alleged science of osteopathy has never changed, that it has always included all drug therapy and the performance of operative surgery, and that osteopaths now believe, and have always believed in the same procedures and methods practiced by the medical profession.

Those who are acquainted with the history of osteopathy know that the claims pertaining to drug therapy and surgery, do not coincide and cannot be reconciled with the statements of the founder of osteopathy and with those contained in osteopathic literature down thru the years the "discovery" of osteopathy has existed.

An interesting illustration of this fact is contained in an article entitled "The Application of the Principles of Osteopathy" which was published in the November, 1940, issue of the Forum of Osteopathy and which was written by a prominent osteopath who has been the Secretary of the National Medical Board of Examiners for Osteopathic Physicians, a recent President of the American Osteopathic Association, and an official in the legislative programs of that organization. The article contains the following statements:

> "You have had it outlined to you here that osteopathy is based fundamentally upon the concept that the body has within it the fluids and forces necessary to protect it from disease processes, and that structural integrity is a requisite for the maximum efficiency of its inherent protective processes.
>
> To apply the principles of osteopathy is primarily to adjust structural irregularities and to normalize functional activity through manual manipulation.
>
> Application of the principles of osteopathy requires:
>
> 1. A knowledge of the normal relations of the body structures in a natural standing position and, especially important, the normal relations of the joints, particularly the spinal joints, and adjacent tissues.
>
> 2. A knowledge of the normal feel of tissues.
>
> Under the second head you develop a knowledge of the feel
>
> (a) Of tissue in a recent osteopathic lesion as distinguished from that in a chronic lesion.
> (b) Of tissues where there is general infection.
> (c) Of local skin temperature variations.
> (d) Of lack of tone.
> (e) Of spasticity.
> (f) Of fibroid tissue formation.
> (g) Of ossification between joints.
>
> 3. A knowledge of the normal variation of relations in various naturally assumed positions, especially the normal range of joints.
>
> 4. A knowledge of the effect upon the joint and supporting tissue of motion which forces the joint in given ways beyond its natural range of motion.
>
> 5. A knowledge of where in the joint are the adhesive restrictions or positional impediments which limit the motion in a given manner after the joint has been injured.
>
> 6. A knowledge of the adherence of the articular surfaces of joints through the principle of suction.
>
> 7. A knowledge of how much force to apply under varying tissue conditions and with different individuals; the best use of force to break adhesions, to facilitate joint circulation and absorb tissue thickening and the products of inflammation, to align structure and normalize motion.
>
> 8. A knowledge of the mechanics of body balances; how parts are thrown off balance by lesions and conditions sometimes distant from them.
>
> 9. A knowledge of the physiology of the tissues and organs supplied by nerves from each segment and region of the spine.
>
> 10. A knowledge of reflexes, with especial consideration to the bearing of osteopathic joint lesions upon them.
>
> 11. A conviction that the human body is endowed by the Creator with inherent self-protection and recuperative agencies which are cardinal factors in the maintenance of health and recovery from disease and injury, and that manual manipulative procedures to remove the impediments of structural irregularities, and to activate these natural agencies, constitute the most effective therapy. . . .
>
> You will recall an oft-mentioned incident of Dr. Still's boyhood life. He used to have congestive headaches. One day when he had one he lay down with his head in the swing rope and found later that it had stopped his headache. Thereafter he "roped his neck" when he had a headache.
>
> It was not alone direct pressure on the tissues caused by the rope that got the results, but the upper

cervical and occipito-atlantal articulations were sprung apart, aiding in freeing the circulation of fluids and releasing nerve-irritating tissue tension there. And when you hold the back of the neck to relieve headache, as is often done, you'll always get better results if it is done in a manner to spring the vertebrae apart rather than just pressing on the tissues.

In Dr. Still's 'Autobiography,' Chapter 9, he tells of his first case of bloody flux, and how he pressed along the child's spine on the rigid places. When he pressed, in addition to the relaxation of the tissues by the pressure, he was gently springing the intervertebral and costovertebral joints. He used to tell us when we had summer complaint to lie backwards over a barrel with the pressure where it felt tender. It works —and again the articulations are sprung.

The same is true when treating a pneumonia patient who is quite weak and not to be disturbed. You put your hands under him as he lies on his back and exert gentle but firm pressure between the upper thoracic transverse processes at points of palpable tension. You not only relax deep contractures through the inhibition of direct pressure, but you, too, spring the articulations with the added benefit indicated. . . .

Every since we have been a profession it has been a constant fight to convince many in our own ranks that we have something better than the other fellow in therapy. We fall for this or that newly evolved and currently ballyhooed professional panacea. To the extent that we do that we neglect the development and best utilization of our own vastly more efficient. therapy

Dr. Still said: 'Whenever a drug goes in some osteopathy goes out.' True, isn't it?

The most recent panacea which seems to have hypnotized some in our ranks is sulfanilamide and its pharmaceutical cousins. . . .

(It would be interesting, however, to follow up and see how many later die or have injured health from the vicious effects of this powerful systemic poison upon the body tissues, and the final chapter of the story cannot be written until that is done.) . . .

You will not most successfully apply the principles of osteopathy by merely tacking certain manipulative procedures to a general medical education. At times there has been an attempt to solve our educational problems that way.

Osteopathy is built upon a process of reasoning.

Only by indicating from day to day in the classrooms of every subject taught in an osteopathic college, the practical applicability of what is being taught to osteopathic procedure, will the maximum results be achieved in starting out practitioners as osteopathic reasoners, those who will best apply the principles of osteopathy.

Certainly every teacher in an osteopathic college should have a clear cut conception of the principles upon which our practice is based and should be sold on osteopathy.

Dr. Still's greatest concern was to make us think osteopathically, reason osteopathically.

You cannot think the body has within it its own drug store, as Dr. Still expressed it, effectively apply osteopathic reasoning to the end of giving the recuperative power of the body their biggest chance, and at the same time think that the poisons of sulfanilamide and sulfapyridine put into the system will benevolently eliminate mankind's infective ills.

You get mixed pickle ideas instead of definite, positive ones along a given line of reasoning.

You cannot do it successfully any more than you can have a democratic and a totalitarian form of government running at the same time in the same country."

Seemingly any scientific person would agree that there is no place for the use of remedial drugs in principles of the kind above expressed. If it be reasoned, as osteopaths have always argued, that the body is a machine, that the body has within itself all of its needs, that foreign substances introduced are completely detrimental, that sickness and disability do not result unless parts of the body become maladjusted, and that adjustment and stimulation are thereby the way for cure, it is impossible to see how the osteopaths can maintain that there is even a single place in their armamentarium where they can consistently administer a drug or drugs for curative purposes.

It is also impossible to reconcile therapeutic surgical procedures by an osteopath when one applies the above theory to its logical conclusion and when comparison is made with the unequivocable statements of the founder and other teachers of osteopathy concerning the application of the manipulative theory to those cases which are commonly considered to be surgical by the medical profession.

It may be that the word confusion is not correctly descriptive of the situation in which the osteopaths find themselves involved. Perhaps it is more accurate to say that osteopaths in practice have found that the osteopathic theory will not work, that the principles of medicine and surgery, which they have so strenuously opposed, do work, and that they feel it is better to forget their own theory than to merely go out of business. Two things, however, are clear and definite in this regard. Osteopathy through the gradual abandonment of its own alleged distinctive therapy is proceeding into the slow, lingering death that has been experienced by numerous other cults which claimed to have something new and different. Likewise, that osteopathy can never hope to call itself a profession when it merely apes in second rate manner the work and beliefs of a profession.

SULFATHIAZOLE, A NEW THERAPEUTIC AGENT*

Since the introduction of sulfanilamide in the treatment of infections, there has been a great impetus to the study of other drivatives of this compound. The most recent contribution is sulfathiazole, which is the thiazole analogue of sulfapyridine. Sulfathiazole was synthesized by Fosbinder and Walter, and by Lott and Bergeim in 1939.

In contrast with sulfapyridine, the drug sulfathiazole is more readily absorbed and is more rapidly excreted, and considerably less is conjugated. Likewise, sulfathiazole is much less toxic, causing vomiting in only about ten per cent of the cases, which is one of the disadvantages of sulfapyridine. However, recrystallization of the drug in the renal tubules may produce serious renal complications, although these are usually transitory. No particular effect upon the hemopoietic system has been noted. Dermatitis is a relatively common toxic effect, and peripheral neuritis has been reported.

Merry Christmas

Clinical application of this new chemotherapeutic agent indicates that it is most efficacious in the treatment of staphylococcus septicemia. Spink and Hansen[1] report the successful treatment of fifteen consecutive patients with staphylococcus septicemia with sulfathiazole. Spink and Paine[2] report considerable success with the use of sulfathiazole crystals in localized staphylococcus lesions, such as carbuncles and abscesses. Urinary tract infections due to staphylococci and to Streptococcus faecalis [3 and 4] respond to sulfathiazole, whereas sulfapyridine and sulfanilamide fail to sterilize the urine. In the treatment of pneumonia, results with sulfathiazole are quite comparable to results with sulfapyridine. However, the effect is not as dramatic, although the toxic effects are less.

The recommended dosage of sulfathiazole for adults and older children consists of an initial dose of two to four grams, and one gram every four hours thereafter until the temperature has remained normal for forty-eight hours. The dosage is then gradually reduced and discontinued on the fifth to seventh day. For infants and children, .25 of a gram per kilogram of body weight is given in divided doses until the temperature is normal; then the dose is gradually decreased and the drug is discontinued on the fifth to seventh day. The sodium salt of sulfathiazole may be given intravenously in a five per cent solution of distilled water, and initial dose of three grams, and one gram every eight hours. To control the dosage requirements and to prevent serious toxic manifestations, daily estimations of free sulfathiazole should be made. Concentrations of from three to six milligrams per cent of the free form of the drug are considered adequate. Determinations of sulfathiazole in the spinal fluid indicate that very little of the drug enters the subarachnoid space; therefore, in cases of pneumococcoc meningitis, sulapyridine is the drug of choice.

From the available laboratory and clinical data it may be concluded that sulfathiazole is the most effective therapeutic agent in the treament of severe straphylococcal infections. In the treatment of pneumonia it is of about the same value as sulfapyridine, although somewhat less toxic than the latter drug. In certain types of urinary tract infections, it is more efficacious than either sulfanilamide or sulfapyridine.

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*From the Journal of the Iowa Medical Society—October, 1940.

CANCER CONTROL

MALIGNANT KIDNEY TUMORS

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Topeka, Kansas

Primary neoplasms of the upper urinary tract fall into three general classifications: First, growths arising in the kidney proper. This group is particularly hard to differentiate or classify. Adeno-car-

cinoma and alveolar carcinoma are perhaps the commonest forms in adults although frequently it is extremely difficult to differentiate between these and adenoma or hypernephroma. Second, those tumors of the renal pelvis which are rather similar pathologically to tumors of the bladder, and third, those of the ureter. Primary neoplasms of the ureter are so unusual they can demand little space in this brochure. Malignant papilloma, carcinoma, squamous-cell epithelioma and sarcoma have been reported but are extremely rare.

It may probably be said without fear of contradiction that the most common malignant tumor of adult life is hypernephroma. The theory that the histogenesis of this growth is the incorporation in the fetal kidney of particles of adrenal tissue has been attacked by numerous observers, and as Young points out, many competent pathologists have described them as sarcoma, angiosarcoma, endothelioma and carcinoma. The problem is fortunately simplified by the fact that whether we are dealing with a true hypernephroma or carcinoma, sarcoma, or any other malignant tumor of the kidney, the symptoms are much the same, the diagnosis based on the same principles and the treatment identical.

The vitally important thing in the diagnosis of all malignant tumors of the kidney is an early recognition of the pathology present, and yet in this very necessity we meet with an extremely difficult problem in that early clinical manifestations are either very rare or absent, and there are no definite indications of early precancerous change.

The cardinal symptoms of renal tumors in hematuria. The blood may be present in quantity or only evident thru microscopic study. If the bleeding is free, clots may form in the bladder, while small worm-like clots from the ureter suggest the renal origin of the blood. A mild form of hematuria, varying from time to time in degree and with the absence of any other symptoms, thru its apparent insignificance, may blind both the patient and his physician to the presence of a grave pathological condition until so much time has passed that the prognosis is bad.

Pain is not a constant symptom of renal tumor. There may be attacks of classical renal colic from clots forming in the kidney pelvis or ureter, or perhaps a dull pain in the kidney region bearing no particular relation to the periods of bleeding. The absence of pain is not a dependable factor in diagnosis since many cases go on to complete involvement of the kidney and hopeless metastasis without the patient having suffered any pain whatever.

The presence of a palpable tumor is of obvious importance but it should be born in mind that many malignant kidneys are not markedly increased in size. A malignant kidney that can be palpated is usually an advanced condition.

Pressure symptoms resulting from the tumor obstructing the veins or lymph channels may result in varicocele on the same side as the tumor or oedema of the legs if the vena cava is compressed. Loss of weight and strength is not usually present until an advanced stage of the disease is reached. This is also true of metastatic symptoms which once accurately demonstrated contraindicate surgical treatment of the original kidney condition.

The diagnosis of renal tumors demands a painstaking urological study. Definite location of the origin of the bleeding, a check on the renal function of the afflicted side, and a retrograde pyelogram are usually conclusive. A simple x-ray film may bring out a suspicious kidney outline or intravenous visualization demonstrate the fairly classical distortion of the kidney pelvis and calices, but should never be taken as diagnostic proof of renal neoplasm alone. When intravenous urography was introduced, the method was hailed as an important diagnostic procedure which would be of great benefit in early diagnosis. In practice it has proved disappointing since it is not only subject to much error but has become almost too available with the result that films have been misinterpreted by the well-meaning general practitioner, and have perhaps encouraged him to procrastinate to a dangerous degree before securing competent urological consultation.

The treatment of malignant tumors of the kidney is surgical, at the earliest possible time that diagnosis can be made. Since there is a marked tendency for the tumor to involve the renal vessels, the pedicle should be divided as far from the kidney as possible. Because of the great frequency of metastasis the use of massive doses of x-ray in the form of high voltage deep therapy should be seriously considered in all cases.

MEDICAL ECONOMICS

INDUSTRIAL MEDICAL MOBILIZATION

H. M. Glover, M.D.

Newton, Kansas

Committees on industrial health in state and county medical associations will play an important part in medical preparedness. Much of the planning is still in formative stages. This paper will attempt to point out in what directions the committees may be called upon for specific industrial health assignments.

In war time the medical needs of the country must be adjusted to take care of:

a. The civilian population.
b. The workers in essential war industries.
c. The armed forces.

It is agreed that as war is waged these days loss of working time by skilled and indispensable workers must be classed as war-time casualties which require mobilization of medical resources for competent handling to as great a degree as those which occur in the combat forces. The medical profession is on a whole better equipped to perform a competent task than it was twenty-five years ago. New occupational hazards have been studied and we have improved control over old ones. Industrial medical departments have been established in many industries, and the medical profession is better organized in this specialty than twenty-five years ago.

Chief responsibility for the health of workers in war time industry will fall to the United States Public Health Service under Dr. Paul Neal. Some of the activities to be carried out by the personnel of bureaus of industrial hygiene in health departments will deal with the following subjects:

1. The location of new plants and advice on construction and renovation of plants in the interest of safety and health.
2. Investigation and control of specific industrial hazards.
3. Study of fatigue in relation to the defense program.
4. Absorption of handicapped persons in industry.
5. Survey of present health service facilities in industry.
6. Program for physical examination and medical services by industry.
7. Classification and training of additional personnel.
8. Classification of educational institutions for the training of personnel and existing laboratories which could investigate hazardous materials to be employed in defense industry.
9. The preparation and dissemination of information on various toxic materials and processes for the practical protection of the health of workers.
10. The promotion of measures for the control of syphilis, tuberculosis, and other communicable diseases among industrial workers.

The Committee on Medical Preparedness of the American Medical Association is working to determine present resources for adequate medical supervision of industrial workers. It is made up of members from each of the army corps areas and works in close cooperation with the Surgeons General of the army and navy medical corps and the Sugeon General of the United States Public Health Service. Similiar committees have been appointed by the various state medical associations and will be organized in all county societies to cooperate.

The Council on Industrial Health will work in close cooperation with the Committee on Medical Preparedness of the American Medical Association. At its recent meeting, it was decided that the Council could be most helpful to the Committee on Medical Preparedness in the American Medical Association by vigorously supporting the following program.

1. To identify all physicians now qualified to perform various aspects of industrial medical service. It is estimated that five thousand physicians who have had some participation in industrial medical activity will be available immediately.
2. To inquire of each industrial physician whose name is derived from this census of physicians, his qualifications and experience and the nature of the industrial medical facilities at his command. A questionnaire will be sent out securing this information.
3. To acquire and publish information on the nature, location, and control of dangerous industrial health exposures.
4. To improve and augment the organization of cooperating committees on industrial health in the state and county medical societies, and to develop a program of field activity to the end that:
   a. Agencies can readily be formed in industrial areas with knowledge and authority to determine where industrial medical service is needed and to arrange that the service be supplied.
   b. Proper coordination exist between all independent agencies having an interest in industrial health, notably physicians in general and special practice, nurses, hygienists, and other technical experts.
   c. Proper correlation exist of all activities bearing on the problem of industrial physical examinations.
5. To assist in the development of intensive training courses in industrial health methods.
6. To insist that an assignment in industrial practice be regarded as equal in importance and dignity to a medical assignment with the combat forces.

It is urged that the committees on industrial health in the state medical societies should give prompt consideration to the steps which they can take to be most useful to committees on medical preparedness in their own state societies. The following steps are recommended:

1. Establish working relationships with the committee on medical preparedness in your own state medical association. Let that agency know of your existence and present status of your program.
2. Improve or augment committee personnel so that when the demand comes your committee can be depended upon to establish or assist in the establishment of agencies in industrial areas with knowledge and authority to determine where industrial medical services are needed and to arrange that the service be supplied. It is urged that the state committees include representation from:
    a. Private practice.
    b. Full-time industrial work.
    c. Medical representation.
3. Smooth correlation requires that your committee be fully aware of the industrial health program of the bureau of industrial hygiene in your state health or labor department and that the bureau be well informed of your own plans.
4. Establish working relationships with state and local societies of industrial physicians and surgeons. It is from this group of men that talent must be drawn for competent service early as well as teachers who can train other physicians to do a competent job in industrial practice.
5. Establish working relationships with state or local organizations of industrial hygiene engineers, safety engineers and industrial nurses.
6. Extend your own industrial health program into the county medical societies wherever the concentration of industrial activity warrants it.
7. An industrial health program should be a continuous one if any appreciable effect on industrial health standards is to take place. The presentation of a report to the medical society at its annual meeting is not sufficient. Keep the officers of your society informed as to your activities and cultivate their interest and support.

Catastrophe Units have recently been organized in New York City as a manifestation of practical preparedness to function promptly and efficiently in event of major disasters. These units, consisting of doctors and nurses on the staffs of four municipal hospitals, are located at Bellevue, Queen's General, Kings County, and Morrisania Hospitals. The Bellevue Unit has been called out on four occasions to care for the victims of a large explosion, to render service to refugees on the S.S. Harding, to a major accident in a theatre and to the recent accident in the Grand Central Railroad Station.—Hospitals, August, 1940.

TUBERCULOSIS CONTROL

INCIDENCE OF TUBERCULOSIS AMONG UNIVERSITY STUDENTS*

Erik Hedvall, M.D.

Pulmonary tuberculosis is characterized by an insiduous protracted course and a prolonged absence of clinical symptoms. When such symptoms finally appear, the lung changes have frequently spread extensively in one or both lungs. It is essential, therefore, that pulmonary tuberculosis should, if possible, be diagnosed before the appearance of morbid symptoms.

EXAMINATION PROCEDURE

On registration all students are required to come to the Student's Tuberculosis Bureau for an examination. On the first a careful history is taken, a tuberculin test by the Pirquet method and a sedimentation test are made, together with a fluoroscopic and radiographic examination. If the tuberculin test is negative, the students are retested by the Mantoux method with from 0.1 up to one. mg. tuberculin. Only those who do not react to the one mg. dosage are considered negative.

A re-examination of all students is made at least once a year following the same procedure of the original examination, with the exception of the x-ray examination and this is done every third year. However, an x-ray is taken when the previous history, rate of sedimentation or fluoroscopic examination indicates something suspicious or when greater caution is necessary for some other reason. When the tuberculin reaction changes from negative to positive an x-ray is taken every third month during the first year after the primary infection and every six months during the second year, even if no changes have been demonstrated. On the other hand, if any changes are observed they are followed by means of x-rays at intervals of a few weeks or months, irrespective of expense.

Altogether 3,336 persons were examined; 638 were medical students, 1,367 philosophy students, 409 theology students, 488 law students. To these were added 434 probationary nurses at the South Sweden School for Nurses. They were included in order to obtain a comparison with the medical students since both these groups are undoubtedly exposed to a certain risk of tuberculous infection.

RESULTS OF SURVEY

Among those examined, 133, or approximately four per cent, were found to have active tuberculosis. Of the 133 cases, (a) forty-seven were tuberculin-negative and had normal lung x-rays when entering the University or School for Nurses; (b) forty-three had been infected at some period of their lives, since they were tuberculin-positive on first examination but were radiologically sound and (c) the remaining forty-three were tuberculin-positive and did not show a normal x-ray picture of the lungs on first examination. Some of these already had tuberculosis but others did not develop it until later.

In general, the tuberculous changes were progressive and significant. Of the forty-seven who showed no evidence of tuberculosis on entrance, there developed fourteen cases of pulmonary tuberculosis as well as cases of erythema nodosum, exudative pleurisy, tuberculous peritonitis, and miliary tuberculosis with two deaths.

Of the forty-three in the second group who were tuberculin-positive but radiologically sound on first examination, thirty-seven developed pulmonary tuberculosis, two tuberculosis of the hilar lymph nodes, and four pleurisy. One of the cases of pleurisy developed pulmonary tuberculosis as a complication and died.

Of the 133 cases of tuberculosis found in the period from 1930 to the end of the 1937 Spring term, 110 were among the University students and twenty-three among the nurses. Ninety-five students and fifteen nurses are at present fit for work. Of the other cases, nine have died, five are unfit for work and nine are still at the sanatorium.

It is of interest, however, not only to know the number of cases found and how they developed, but also the frequency of the disease in the different groups, as shown in the table:

	No. of Persons Examined	No. of Cases of Tuberc. Found	Percentage
Medical students	638	72	11.3
Philosophy students	1,367	17	1.2
Theology students	409	12	2.9
Law students	488	9	1.8
Nurses	434	23	5.3

These figures indicate that both medical students and probationary nurses are exposed to a considerable risk of tuberculous infection.

MEDICAL STUDENT INCIDENCE STUDIED

During the first year, no case of tuberculosis was found among the medical students. In the second year four cases were detected and during the third to fifth year ten cases each year. From the sixth to the ninth year only six, four, two and one cases respectively were diagnosed. Thus, most of the tuberculous cases were discovered during the third to fifth year of study, a period which coincides with the last course before and the first courses after the beginning of the practical training at the hospital. Since the medical students live under practically the same conditions as other students at the University, the high tuberculosis morbidity among them must be due to a risk of infection to which they alone are exposed.

Quite a number of the medical students are primarily infected before they begin their hospital training course and, therefore, some course taken before this training must be significant. The medical students themselves have for a long time suspected that the course in general pathology taken before the hospital duty, and lasting one year, constitutes a danger of tuberculous infection. In at least sixteen cases, there is a significant connection between the course of general pathology and the appearance of the primary infection. In the other cases the primary infection occurred either before or after the pathological course, during the training at the hospital.

The infection acquired during the course in pathology may have originated from fellow-students or physicians. The probability of this happening was, however, carefully excluded. For this reason, thorough and repeated examinations of the autopsy rooms were made for the presence of tubercle bacilli. Samples were taken from towels, trays, dust on the autopsy tables and in the rooms and it was found that in spite of all precautions during the post-mortem examinations, tubercle bacilli were discovered when an examination was made twenty-four hours after a necropsy examination of a person with pulmonary tuberculosis. In addition to guinea pig inoculations, suitable cultural experiments were made to obtain a quantitative idea of the presence of tubercle bacilli on the objects and in the rooms examined.

As a result of these examinations, more stringent precautions in disinfecting the autopsy rooms were taken and finally it was agreed, at least for the present, to limit the necropsy examinations to tuberculous patients as much as possible. The results of the latter step are as yet available only for two terms. Nevertheless, examinations showed that for the first time all tuberculin-negative reactors at the beginning of the course, were also negative at the conclusion of the course. The investigation is being continued and the definite result awaited, but the authors feel they are justified in expressing the view that excessive tuberculous morbidity among medical students can be reduced by taking special precautionary

measures against tuberculous infection in hospitals and in rooms in which necropsy examinations of tuberculous subjects are performed.

*Tuberculosis Abstracts, December, 1940. The Incidence of Tuberculosis Among Students at Lund University, Erik Hedvall, M.D., Amer. Rev. of Tuber., Vol. XLI, No. 6, June, 1940.

THE MEDICAL MANAGEMENT OF URINARY INFECTION IN PREGNANCY

(Continued from Page 513)

and administered over a sufficient period of time, in doses commensurate with the degree of infection.

If, however, as it frequently occurs in the case of acute pyelonephritis, there is no alleviation of symptoms after a period of six or seven days, as a result of such therapy, more heoric measures should be instituted, such as renal lavage or placement of indwelling ureteral catheters.

NEWS NOTES

DUES

The following bulletin in regard to 1941 membership was forwarded to the secretaries of the county medical societies on November 15.

As is customary at the end of each year, we have enclosed a copy of the official membership report for your society. The front side of the report may be used for the listing of members and the reverse side is provided for the listing of ineligible and other physicians in your county.

The State Society dues for 1941 will be $15.00 per member which, as you know, is in accordance with the action taken by the House of Delegates at the last annual session. Although the increase is substantial, it is believed that special assessments may thereby be avoided and that the additional amount will enable the Society to considerably expand its program. We sincerely hope that your members will agree with this action taken. Any local dues desired by your society may, of course, be added to the above amount.

The issuance of membership cards in addition to our other work presents a considerable task for the central office, and thus if some delay occurs in the handling of your report we ask your forgiveness.

We realize that the collection of dues occasions many difficulties for the secretaries of county medical societies, and we assure you that the Society is particularly appreciative of your assistance in this regard. If there is any way in which we can help we shall be happy to have you call upon us.

We have also listed below for your information the By-Laws provisions pertaining to county medical society annual reports:

Sec. 13. The secretary of each component society shall keep a roster showing the names of its members and the names of the non-affiliated registered doctors of medicine of that county, their addresses, colleges, dates of graduation, dates of license to practice in this state, and such other information as may be deemed necessary. In keeping this roster the secretary shall note any changes in the personnel of the profession by death or by removal to or from the county, and in making his annual report shall account for every physician who has lived in the county during the year.

Sec. 14. The secretary of each component society shall forward the assessment of that society, together with its roster of officers, members and list of non-affiliated physicians, to the Executive Secretary on or before the first day of February each year.

Sec. 15. Any component society which fails to pay its assessment and make an annual report on or before the first day of February shall be held as suspended unless special permission is secured from the President, whereupon remittance of the assessment may be delayed not longer than April first of that year, and none of its members or delegates shall be permitted to participate in any business or proceedings of this Society, or the House of Delegates, until such requirements have been met. A member of any component society who is shown in an annual report to be in suspension for non-payment of dues shall be reinstated by said component society upon payment of his assessment during that year. If a member shall remain in arrears in payment of his dues beyond the following December 31, he shall lose his membership and shall not be entitled to reinstatement except upon formal action of his component society and upon payment of all assessments in arrears: Provided, that any member upon showing just and sufficient cause which prohibits his active local practice, may cause the necessity for formal readmittance and payment of dues in arrears to be waived by securing a leave of absence, demit, or other permission for non-membership from his component society at the time he intends to discontinue payment of assessments. The Council may waive the necessity for payment of dues in arrears if it finds that unusual circumstances make such action advisable.

COMMITTEES

The following is a report of recent activities of Society Committees:

The Committee on Control of Tuberculosis met in Topeka on November 10. The foremost matters discussed were: The need for additional tuberculosis sanitoria in the state, the present programs of the Kansas State Board of Health, the Kansas Tuberculosis and Health Association and the Norton Sanitarium; the tuberculosis and silicosis problem in the southeast portion of the state; endorsement of the tuberculosis Christmas seal program conducted by the Kansas Tuberculosis and Health Association and selection of a speaker on tuberculosis for the next annual session.

A meeting of the Committee on Public Policy was held in Topeka on November 8. Plans for the work of that committee for the coming year were discussed and prepared.

The Medical Advisory Committee on Pneumonia Control has forwarded a bulletin to the county medical societies advising that speakers can be provided on that subject.

A suggested talk on cancer for lay use has been sent to the county medical societies by the Society Committee on Control of Cancer. Another bulletin was forwarded by that committee on October 31 describing the availability of a Kansas State Board of Health truck which will present movies and exhibits on cancer at lay meetings.

Dr. L. M. Tomlinson of Harveyville, Chairman of the Committee on Stormont Medical Library is conferring with Justice W. W. Harvey, Director of the State Library, in regard to the possibility of providing a separate room or other more satisfactory housing for the Stormont Medical Library.

The Committee on Medical Schools met at Wichita on December 15.

APPOINTMENTS

The following appointments were recently announced:

Dr. W. M. Mills of Topeka as a member of the Executive Committee of the Western Surgical Association.

Dr. Marion Trueheart of Sterling as the Kansas Chairmen of the American Society for the Control of Cancer.

Dr. C. C. Nesselrode of Kansas City as the Governor of Kansas for the American College of Surgeons.

MEDICAL BOARD

The Kansas State Board of Medical Registration and Examination met in Topeka on December 10-11. Examinations were given to twelve applicants and six applications for reciprocity were considered. Other Board matters were discussed. The names of the new licensees will be published in the next issue of the Journal.

INJUNCTION

Judge C. W. Ryan of the Twenty-second District Court, enjoined E. B. Martin of Wathena from the further practice of medicine on November 27, 1940. Martin had been charged with the practice of medicine and surgery without a license. The case was brought by the Kansas State Board of Medical Registration and Examination in conjunction with the county attorney of Doniphan County.

MEDICAL DEFENSE

The Selective Service System of Kansas announced recently that arrangements have been made wherein the medical examiners of the County Selective Service Boards may be assisted by the other doctors of medicine in their counties in the provision of physical examinations for draft registrants. The plan adopted for this purpose is as follows:

> Arrangements can be made with the county boards for approval of the assisting physicians; the assisting physicians may then examine registrants and prepare and sign their own findings on forms provided by the State Selective Service office; these forms are then attacher to and permanently filed with the physical examination reports signed by the medical examiners.

This plan will obviously make possible the distribution of the work incidental to examination of selective service registrants among all doctors of medicine in each county and it will also enable rotating services, other group methods, and examinations on an individual basis to be used. The reason for the requirement of duplicate signatures by the medical examiners and the assisting physicians is the fact that official approval of the assisting physicians, as provided under the National Selective Service Act, would otherwise need to be obtained before their services could be utilized. It is believed that the above procedure will make it possible to avoid the delay and other difficulties which would be incidental to obtaining individual approval of assistant examiners.

The American Medical Association has supplied the following information prepared by Surgeon General Magee of the United States Army which contains an excellent description of probable future developments of the medical aspects of the national defense program:

> Uppermost in the minds of all physicians is undoubtedly the question of National Defense and, at the present time, of the plan of the medical departments of the armed forces to meet the immediate twofold problem of furnishing an adequate medical service to the men of our unprecedented peacetime Army and Navy, and of training the large number of Medical Department trainees who, at the expiration of their twelve month military service, will pass to the Enlisted Reserve Corps and furnish the trained personnel required for mobilization in the event of a national emergency. The Surgeon General of the Army has furnished the following outline regarding the participation of the Medical Department of the Army in the 1940-1941 Military Training Program. It is felt that this timely article will be of great interest to the medical profession at large and of personal importance to those physicians whose participation in the Military Program is highly probable.
>
> The total strength of the Army of the United States next Spring will be approximately 1,400,000. This represents a Regular Army of 400,000 officers and men, the National Guard of the several States Federalized as the National Guard of the United States, numbering 200,000 and citizens selected for military training during the coming twelve months —about 800,000 in number. The latter will receive their training in active units of the Regular Army and of the National Guard, in Regular Army inactive units activated for training purposes, in the numerous installations required for the overhead of these forces and in Enlisted Replacement Centers throughout the nine corps areas of the country.
>
> The Medical Department is charged with providing adequate medical service for the entire Army of the United States at posts, camps, and stations within and beyond the continental limits of the United States. In each military station in the United States there will be a hospital with four beds for each 100 of the military population. The operating room, kitchen, messing facilities, and clinics in each of these hospitals will be of sufficient size to provide service for an additional one patient per 100 men so that in an emergency it will be necessary to construct only the additional ward buildings. Furthermore, there will

be general hospitals suitably located throughout the United States to provide an additional one bed per 100 of the military population.

The provision of five per cent of hospital beds which can be rapidly expanded to six per cent may appear excessive when compared with hospitalization provided for the civilian population of this country. However, all of the military sick, including such cases as in civilian life are ordinarily cared for in their home, must be treated in hospital since they cannot receive satisfactory care in the barracks. In addition, when young adults are brought together in large groups contagious and infectious disease that spread rapidly under such conditions occur much more frequently than in civil life. Furthermore, sufficient beds must be provided for the care of the sick during the winter and spring seasons of the year when there is always an excessive number of such cases.

Scattered throughout the large camps or stations there will be dispensary buildings and dental clinics for the infirmary care and dental treatment of the personnel. In addition, in each large camp there will be a medical headquarters, with properly qualified scientists for the general supervision of the medical activities, including the protection of the health of the troops, the careful inspection of food products, and the general supervision of the nutrition of the men.

The Medical Department will be charged with the training of the Medical Detachments and the Medical Department Units of the Regular Army and the National Guard, and with the instruction of the service personnel in hospitals and other installations. It is also responsible for the preparation of the trainees in Enlisted Replacement Centers, in hospitals and in service schools, who will receive there the individual Medical Department instruction which will permit their incorporation in organizations for further unit training.

The initial requirement will be approximately 6.5 doctors for each 1000 men in the military service. Rapid calculation will show that the total number for an Army of 1,400,000 men will be 9,100 doctors. Additional ones may be required, but in the interest of economy the initial procurement will be limited to the number stated. The 1200 physicians in the Regular Army and the 1100 in the National Guard are included in the total, leaving approximately 6800 physicians to be supply by the Reserve Corps. There are now approximately 1500 Reserve physicians, leaving 5300 to be procured during the next few months.

Under the present Joint Resolution passed by the 76th Congress, the President is authorized to order into the active military service of the United States for a period of twelve consecutive months each, any or all members of any Reserve componet of the Army of the United States, with or without their consent, to such extent and in such manner as he may deem necessary for the strengthening of the National Defense. If a sufficient number of officers do not indicate their availability for this service, Reserve officers must necessarily be ordered to duty without their consent. Additional appointments among physicians of draft age will increase the strength of the Medical Corps Reserve. However, it is apparent that a very large percentage of these officers must participate actively in the present program for preparing a portion of the country's man power for National Defense.

In establishing rosters from which officers will be ordered to duty, Corps Area Commanders and Chiefs of Branches have been instructed to circularize all Reserve officers under their assignment jurisdiction to permit them to state the amount of deferment desired and the cogent, pertinent reasons for such deferment in the event that they are not immediately available for military service. This action has been taken in view of the fact that a national emergency has not been declared by the Congress, nor has mobilization been ordered. The medical service of a training program, although essential to national preparedness, possesses none of the glamour of the same service during actual military operations; it is, however, equally important. Indeed, military training may, through the thoroughness of its preparation for war, materially assist in preventing the necessity of participation in military operations. It is realized, of course, that all officers would express their immediate availability in the event of war; many, however, feel that their services are not of national importance at the present time.

Both the economic and the rational utilization of medical officers is essential. It is planned that insofar as possible qualified officers will be selected for assignment to duty with units and at installations according to their previous training and experience. Accordingly, selection must be qualitative as well as quantitative in order that the specific requirements of a modern medical service may be properly met. Officers selected for duty will be given the maximum possible advance notice of such action.

In this connection the Surgeon General has suggested that the following points be brought to the attention of all Reserve medical officers:

1. When notified that you have been selected for active duty, submit at once the required report of physical examination. The disclosure of disqualifying defects prior to the issuance of orders may prevent a disruption of your practice or civil employment.
2. Orders issued will place you on active duty at your home or, if a temporary change of address has been submitted, at that location, and will direct you to report to a specific post, camp, or station for duty.
3. Travel to your station may be accomplished by automobile but no delay will be granted for that purpose above the customary time for travel by rail.
4. You will be reimbursed for travel at the rate of eight cents a mile, based on the shortest usual railway route to your station.
5. Transportation for dependents to your first station will not be furnished by the Government. It is perhaps advisable that your family not accompany you since the housing problem at or within the vicinity of Army stations is frequently acute.
6. If you have no uniform and military equipment, these may be purchased at your first station.
7. Pay and allowances are as shown in the following table.

		Allowances			
		Rental Allowance		Subsistence Allowance (30 days)	
Grade	Annual Base Pay	With Dependents	Without Dependents	With Dependents	Without Dependents
Colonel	$4,000	$120	$80	$36	$18
Lieut. Col.	3,500	120	80	54	18
Major	3,000	100	60	54	18
Captain	2,400	80	60	36	18
1st Lieut.	2,000	60	40	36	18

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to Our

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The annual base pay is increased at the rate of five per centum thereof for each three years of service up to thirty years. Full time will be computed for all periods during which they have held commissions as officers in the Army, Navy, Marine Corps, Coast Guard, Coast & Geodetic Survey, and Public Health Service, or in the National Guard or Naval Militia, the National Naval Volunteers, or in the Naval Reserve Force or Marine Corps Reserve, when confirmed in grade and qualified for all general service, and with full time for all periods during which they have performed active duty under Reserve commissions, and with one-half time for all other periods during which they have held Reserve commissions.

Physicians as a group will not be exempt from conscription for military training and service. Their deferment because of importance of civil communities is a function of the Local Draft Boards. Accordingly, it is difficult to approximate the number which will be inducted into the Army. Obviously, the training received by such draftees will be more appropriate and the services rendered the Army of greater value if the physicians who are eligible and qualified for appointment in the Medical Corps Reserve be commissioned in the Officers Reserve Corps for duty as medical officers, rather than continue their training as enlisted men.

Physically qualified graduates of approved schools of medicine who desire appointment in the Medical Corps Reserve for immediate active duty should make application to the Commanding General of the Corps Area in which they reside. Such applications may be submitted either before or after selection for military training and service, or after induction into the Army of the United States. No change in the classification of such applicants will, however, be made by local selective service boards, until the actual letter of appointment has been received.

Appointments in the Medical Corps of the Regular Army will, in all probability, continue as at present through competitive examinations of Reserve officers who have not passed the age of thirty-two years at the time of appointment.

The Surgeon General of the Army, through Lieut. Colonel George C. Dunham the representative of the Medical Department in the House of Delegates, submitted a request to that body at its last meeting in New York in June, 1940, requesting the assistance of the American Medical Association, in the classification and procurement of physicians for the Army. It was hoped in this way to procure the physicians required without disturbing too seriously the civilian medical service and at the same time to place the physicians enrolled in positions for which their previous training qualified them. The House of Delegates approved the request of General Magee and appointed a Medical Preparedness Committee. The U. S. Navy and the U. S. Public Health Service made similar requests.

Reference has been made to the action of the House of Delegates and to the working of the Preparedness Committee in previous issues of the Journal. The Preparedness Committee, the executive officers of the American Medical Association, the chairmen and members of the various States and local committees, have all given generously of their time and funds in this work. They have been of material assistance to the Surgeon General and Corps Area surgeons in the classification and procurement of Reserve Corps medical officers. They generously have offered their assistance in similarly classifying and procuring such physicians as may be required in addition to those in the Reserve Corps. Although the majority of appointments of additional Reserve officers for active duty at this time will be thirty-five years of age or under, a limited number of properly qualified physicians above this age will be required as chiefs of services of the many large hospitals to be established.

The history of our country has repeatedly shown that there is no more patriotic group than the American physicians. They have always responded generously to their country's call for assistance. At this time, although this country is not engaged in war, the National Preparedness Program requires an adequate medical service. Without it, the program will be hampered materially. In addition to the adequate care of the sick and protection of the health of our young men in the camps, the Medical Department must be able to train its personnel to act in conjunction with the troops of the other Arms and Services so that in time of battle, if unfortunately that time should come, it may be able to collect efficiently and evacuate promptly casualties that occur on the battlefield so that each one may receive as promptly as possible efficient medical care. Let us repeat, the succes of the National Preparedness Program depends to a large extent upon adequate medical service. American medicine appreciates its obligations and will furnish a sufficient number of properly qualified physicians.

The American Medical Association advises that all but 148 of the 2,066 medical preparedness questionnaires forwarded to this state have been returned. The Society is now corresponding with the physicians who have not replied in an effort to obtain their questionnaires.

MILK SUPERVISION

The Kansas Supreme Court handed down an opinion on December 7 pertaining to the supervision of milk control. The case, State of Kansas vs. Fred H. Reynolds, which arose in Douglas County, involved a question as to whether the Kansas State Department of Agriculture or the Kansas State Board of Health has authority over certain phases of milk control in this state. An excerpt from the opinion is as follows:

"The sale of impure, unsanitary, unwholesome milk and other dairy products is an offense under specific statutes, independent of any rules and regulations and there are no contentions that representatives of the Board of Health may not be competent witnesses in prosecutions thereunder.

The standards for milk and other dairy products, specifically established by milk acts, cannot be altered by administrative rules or regulations.

Upon the State Dairy Commissioner and his deputies has been placed the duty of enforcing the Milk Acts, and upon the State Board of Health has been conferred the sole power of promulgating rules and regulations as to all matters covered by such statutes.

While we do not now finally determine the matter, we express the present opinion that the State Board of Health has authority in enforcement of provisions of the Food and Drug Acts dealing with the adulteration and misbranding, to adopt reasonable regulations in the matter of Pastuerization and with reference to the bacterial count and such other scientific and medi-

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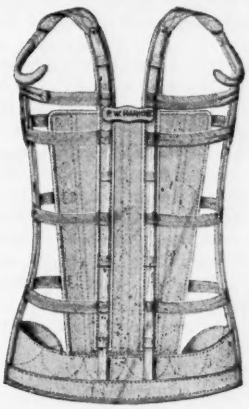

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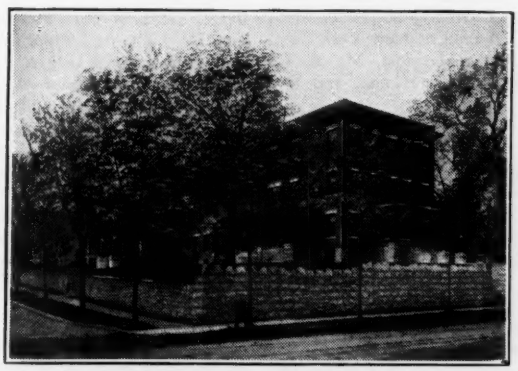

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cal factors of milk as far as the essential nature, character and constituent elements are concerned, such regulations being based upon protection of the public health and the prevention of deception; and to prescribe proper branding or labeling requirements in connection therewith. Such regulations, however, may not lawfully deal with matters of production, handling and sale within the jurisdiction of the State Board of Agriculture.

Regulatory laws are seldom administered without difficulties. Co-operation is needed—by those who are regulated and by those who do the regulating. A considerate attitude, as well as firmness is called for. In the instant case there appears no reason why each of the two agencies involved should not avail itself fully and freely of the counsel of the other."

As the above excerpt indicates, the Court found that authority for this work had been conferred upon the Department of Agriculture by specific statute, that the authority of the Board of Health was based merely upon its power to make regulations and that in a conflict between statutory and regulatory powers, the statutory authority must necessarily override.

MEETING

The Kansas Crippled Children's Commission held a joint meeting with the Kansas orthopedists in Topeka on December 7. Plans were discussed for the appointment of a medical advisory board for the Commission and for the furtherance and improvement of other phases of the Cripped Children's Program.

TECHNICIANS SEMINAR

The Second Annual Technicians Seminar held in Topeka on December 10-11-12 at the Hotel Jayhawk had a registration of seventy-one from all parts of the state. The main feature of this year's program was technical laboratory procedure. Speakers were: Dr. C. J. Weber of Kansas City; Dr. V. D. Foltz of Manhattan; Dr. Cora Downs of Lawrence; Dr. A. J. Mix of Lawrence; Dr. N. P. Sherwood of Lawrence; Dr. R. C. Arnold of New York City, and Mr. Allen Gold, Mr. H. C. Ebendorf, Mr. A. C. Keith, Mr. Frank Victor, Mr. Charles Hunter, and Dr. J. L. Lattimore of Topeka.

COUNTY SOCIETIES

The Allen County Medical Society met on November 19 in Iola. The speakers were: Dr. O. L. Cox of Iola, who spoke on the History of Medicine in Allen County, and Dr. A. F. Rossitto of Wichita.

The Dickinson County Medical Society elected the following officers at its November meeting: President, Dr. H. R. Turner of Hope; Vice-President, Dr. T. R. Conklin, Sr., of Abilene; Secretary-Treasurer, Dr. Daniel Peterson of Herington; and Delegate, Dr. W. Klingbery of Hope.

The Douglas County Medical Society held a meeting in Lawrence on December 3. The following officers were elected for the coming year: Dr. James M. Mott, President; Dr. R. B. Hutchinson, Vice-President; Dr. Wray Enders, Secretary; Dr. E. M. Owen, Treasurer; Dr. L. K. Zimmer, Censor, and Dr. H. L. Chambers and Dr. L. S. Powell, State Delegates. Dr. R. A. Schwegler presented a motion picture on "Local Anesthesia in Obstetrics."

The Franklin County Medical Society held a meeting in Ottawa on October 30. Dr. F. L. Loveland of Topeka spoke on "Medical Preparedness." At the November 27 meeting Dr. Arthur Gray of Topeka spoke on "The Modern Treatment of Venereal Disease."

The Lyon County Medical Society held a meeting in Emporia on December 3. The following new officers were elected: Dr. H. C. Nutting of Emporia as President; Dr. M. W. Woodhull of Cottonwood Falls as Vice-President; and Dr. C. H. Munger of Emporia as Secretary-Treasurer. Dr. Harry Davis of Topeka spoke on "Placenta Previa."

The Marion County Medical Society held a meeting on November 20 at Marion with the members of the Harvey County and the McPherson County medical societies as guests. Speakers for the meeting were Dr. Fred E. Angle and Dr. William H. Algie of Kansas City. Dr. Angle discussed "The Clinical Diagnosis and Treatment of Undulant Fever" and Dr. Algie reviewed "The Chemotherapy and Serotherapy of Pneumonia."

The Miami County Medical Society held a meeting on November 13 in Paola. Guest speakers were: Dr. J. H. Ogilvie of Kansas City, Missouri, who spoke on "Pills, Poisons and Personality"; Dr. D. O. Walthall of Kansas City, Missouri, who spoke on "Chemotherapy" and Dr. F. A. Charmichael, Jr., of Kansas City, Missouri, who discussed "Head Injuries." The next meeting of the society will be held in Paola on December 11.

The Sedgwick County Medical Society met on October 15 in Wichita. Speakers were: Dr. Richard L. Sutton, Jr., of Kansas City, Missouri, who spoke on "Acne Vulgaris and Lipoid Metabolism, the Etiology and Therapy of Acne" and Dr. D. O. Walthall of Kansas City, Missouri, who spoke on "Staphylococcic Infection; Antitoxin and Sulfathiazol Therapy."

The Shawnee County Medical Society elected the following officers at a meeting held in Topeka on December 2. Dr. L. R. Pyle, President; Dr. E. H. Decker, President-Elect; Dr. A. J. Brier, Vice-President; Dr. F. C. Taggart, Secretary; Dr. Guy A. Finney, Treasurer; and Dr. A. K. Owen on the Board of Censors. The speaker at the meeting was Dr. Paul C. Barton, Director of the Bureau of Investigations of the American Medical Association of Chicago, who spoke on "Foods, Drugs and Cosmetics." The wives and guests of members attended.

The Southeast Kansas Medical Society held a banquet on October 23 in Parsons. Dr. J. N. Sherman of Chanute was elected President of the organization for the coming year, and Dr. C. S. Stotts of Fredonia was elected as Secretary-Treasurer.

The Wilson County Medical Society met on October 14 in Neodesha with the Wilson County Auxiliary as guests at a banquet.

The Wyandotte County Medical Society held a meeting on December 3 in Kansas City. Speakers were: Dr. C. Omer West of Kansas City, who discussed "Verrucae," and Dr. W. W. Summerville and Dr. T. R. Hamilton both of Kansas City who spoke on "Cystic Endometrial Hyperplasia." Speakers for the December 17 meeting will be Dr. L. F. Barney and Dr. W. L. Algie of Kansas City.

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MEMBERS

The November 2 issue of Clinical Abstracts printed a review of the article "Lipoid Pneumonia, With Report of a Case" by Dr. Robert M. Carr, of Junction City, which was published in the September Journal.

Dr. Wray Ender of Lawrence has been named health officer for the City of Lawrence to succeed Dr. J. M. Mott, who will leave soon for military duty.

The article on "Artificial Fever Therapy" by Dr. Leland F. Glasser formerly of Kansas City and now of Springfield, Missouri, which was published in the May issue of the Journal, was reprinted in brief in the International Abstract Section of the October issue of Archives of Physical Therapy.

The article by Dr. Harold T. Gross of Manhattan entitled "Erysipeloid" which was published in the August Journal was abstracted in the October issue of the Ohio State Medical Journal.

Dr. George Gsell of Wichita was the speaker before the Lyons Club of Harper on November 21. Dr. Gsell spoke on "The Eyes and Their Care."

An abstract of the article on "Treatment of the Commoner Injuries of the Hand" by Dr. L. S. Nelson of Salina which was published in the June issue of the Journal, was reprinted in the November 1940 issue of Current Medical Digest.

The November 9 issue of Clinical Abstracts printed an abstract of the article "Biological and Biochemical Studies of Curare, Preliminary Report" by Dr. M. E. Pusitz, Dr. J. L. Lattimore, Mr. Allen Gold, and Mr. Harry Ebendorf of Topeka, which was first published in the September issue of the Journal.

Dr. Norman Reider of Topeka was the author of a case report on "Neuropsychiatric Complications Following Severe Loss of Blood" which was published in the November 1940 issue of Archives of Neurology and Psychiatry.

Dr. Fred E. Rogers formerly of Linn is doing postgraduate work at the Cook County Graduate School of Medicine in Chicago, Illinois.

Dr. Ernest M. Seydell of Wichita is the author of an article on "Indurative or Myalgic Headache" which was published in the November, 1940, issue of Archives of Otolaryngology.

The work of the Cherokee Health Department and of Dr. Joseph W. Spearing in regard to tuberculosis and silicosis control was described in the November news letter of the American Public Health Association and in an article by Dr. Alice Hamilton in the August issue of the Survey Graphic.

DEATH NOTICES

Dr. Clarence R. Hepler, 66 years of age, of Parsons, died on November 17. Dr. Hepler was born in Clarion County Pennsylvania in 1874 and came to Manhattan, Kansas, when he was ten years of age. He was graduated from the University College of Medicine of Kansas City in 1902. At the time of his death he was assistant superintendent of the State Hospital at Parsons. He was a member of the Labette County Medical Society.

Dr. Lamoile Rush King, 75 years of age, died on November 4 at his home in Junction City. Dr. King was born December 16, 1864, in Iowa County, Iowa. He was graduated from the University of Illinois, College of Medicine, in 1890 and interned at the Cook County Hospital, Chicago. He was a member of the Geary County Medical Society.

Dr. Benjamin P. Smith, 60 years of age, died on November 5 at his home in Neodesha. Dr. Smith was born in Clyde, Kansas, on November 23, 1879. He was graduated from the Medico-Chirurgical College of Kansas City in 1904. He was a member of the Wilson County Medical Society.

Dr. Michael R. Spessard, 66 years of age, died on October 20 of coronary occlusion, at his home in Beloit. Dr. Spessard was graduated from the Marion-Sims College of Medicine, in St. Louis, Missouri, in 1893. He was a member of the Mitchell County Medical Society.

BOOK NOOK

BOOK REVIEWS

THE PRACTICE OF MEDICINE, Third Edition—Jonathan Campbell Meakins, M.D., L.L.D. Published by the C. V. Mosby Company of St. Louis, Missouri, 1940. Price $10.00. The author, who with the assistance of a very few contributors, produced an excellent treatise on the practice of medicine in 1936, has now revised the text for its third edition. The many important advances in chemotherapy, the vitamines, hypertension, and other fields of medicine are incorporated to bring the work up to date.

The same general form as followed by the previous edition is retained. Treatment is discussed very satisfactorily. This book is one for every day use. D.C.W.

VARICOSE VEINS—Alton Ochsner and Howard Mahorner. Published by C. V. Mosby Company. Price, $3.00. A thorough but concise discussion of the anatomy, pathology, physiology and etiology of varicose veins; a review of the clinical aspects of varicose veins and the various tests which are of value in the study of these patients; and an outline of an efficient method of treatment of the veins and their complications, all go together to make this an excellent monograph—one well worth reading (and re-reading) by physicians who are doing or referring this type of work. There is an excellent discussion of the indications for saphenous ligation, and a detailed description of a technique of ligation which has served the authors well. There is a very extensive bibliography at the conclusion.

One feels from reading the book that the authors have a sound reason for all measures they advocate, and that they are not being "led astray" by excessive enthusiasm for some pet procedure to the exclusion of others. It is recommended as an excellent addition to the rather extensive literature on varicose veins. O.R.C.

SUPERFLUOUS HAIR AND ITS REMOVAL—A. F. Niemoeller, A.B., M.A., B.S. Foreword by M. H. Marton, M.D. Published by Harvest House, 70 Fifth Avenue, New York City. Price $2.00. This is apparently a book for laymen regarding the safe methods of removal of hair. Very sane advice is given in reference to the danger of

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PRINCIPLES OF HEMATOLOGY — By Russell L. Haden, M.A., M.D., Chief of the Medical Division of the Cleveland Clinic, Cleveland, Ohio; formerly Professor of Experimental Medicine in the University of Kansas School of Medicine, Kansas City, Kansas. 348 pages; 14.5 x 23.5 cm. Lea and Febiger, Philadelphia. 1939. Price, $4.50. Cloth.

The author has a very simplified and practical approach to the management of hematological disorders. The important features of his lectures in hematology given while associated with the Kansas University School of Medicine with recent developments bringing the matter up to date are included in the book. There are numerous adequate photomicrographs. There are diagrams which keep the entire subject-matter clear. One of the best features of the book are the 100 selected case histories embracing not only that field which is the delight of the expert hematologist but also the blood disturbances common with almost every case of illness. A sane therapeutic approach is upheld throughout. The simpler and more common laboratory procedures are given in detail. The book should be well received by all laboratories, general practitioners and internists. C.W.E.

MEDICAL WORK OF THE KNIGHTS HOSPITALLERS OF SAINT JOHN OF JERUSALEM—Lieutenant-Colonel Edgar Erskine Hume. Cloth. $3.00. Pp. 371 with 130 illustrations, Baltimore, Johns Hopkins Press, 1940.

This book by Colonel Hume, which is obviously a labor of love, is an extremely valuable contribution to medical history. We find here a most interesting account of the Knights of St. John of Jerusalem from their foundation during the period of the First Crusade down to the present —an uninterrupted, although extremely adventurous course through eight centuries. The history of this venerable order, with its age-old admonition to its knights that they treat alike all sufferers from disease or wounds regardless of race or creed, should be an absorbing story to every physician.

The book is beautifully bound and illustrated with a large number of interesting and well-executed illustrations. The foreword is written by His Most Eminent Highness Fra Ludovic Chigi-Albani, Grand Master of the Order, and there is a preface by Lieutenant-General Sir Aldo Castellani, K.C.M.G., the eminent epidemiologist, who is a knight of this order. This book would make an excellent Christmas present to some friend who is a physician. R.H.M.

Two interesting booklets have recently been received by the Society office from the American Heart Association, entitled, "Standardization of Blood Pressure Readings" and "Examination of the Heart." They are published by the American Heart Association and are the result of careful study by joint committees appointed by the Association and the Cardiac Society of Great Britain and Ireland. The purpose of the Examination booklet is to outline the clinical examination of the heart without the help of any instrument other than the stethoscope. Copies of these booklets can be obtained by addressing the American Heart Association, Inc., 50 West 50th Street, New York, or by addressing the Committee on Study of Heart Disease, The Kansas Medical Society.

BOOKS RECEIVED

CONGENITAL SYPHILIS—Charles C. Dennie, B.S., M.D., Professor of Dermatology, University of Kansas Medical School; Chief of the Department of Dermatology and Syphilology of Bell Memorial Hospital, Kansas City, Kansas; General Hospital and Children's Mercy Hospital, Kansas City, Kansas; and Sidney F. Pakula, B.S., M.D., Visiting Pediatrician to Children's Mercy Hospital, Kansas City General Hospital, Alfred Benjamin Clinic, and Menorah Hospital, Kansas City, Missouri. Published by Lea & Febiger, Philadelphia, Pa., 1940. Price $8.00. Illustrated with 133 engravings, and 596 pages.

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY, AND PHARMACOLOGY, For Students and Practitioners of Medicine—Forrest Ramon Davison, B. A., M.Sc., Ph.D., M.B., Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock. Published by the C. V. Mosby Company, St. Louis, Missouri, 1940. Containing forty-five illustrations with four color plates and 633 pages. Price $——

SYNOPSIS OF PEDIATRICS—John Zahorsky, M.D., assisted by T. S. Zahorsky, M.D. Third Edition, Price $4.00. Published by the C. V. Mosby Company, St. Louis, Missouri, 1939.

NEW AND NONOFFICIAL REMEDIES, 1940—Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1940. Published by the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

THE 1940 YEAR BOOK OF PUBLIC HEALTH—J. C. Geiger, M.D., Dr. P.H. Director of Public Health, City and County of San Francisco; Clinical Professor of Epidemiology, University of California. Published by the Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois. Price $3.00. Table of Content includes: Communicable Diseases and Epidemiology—General, Tuberculosis, Poliomyelitis, Malaria, Venereal Diseases; Food and Milk; Nutrition; Housing; Statistical; Laboratory; Industrial Hygiene; Administration—Medical Care, Maternal Care; Health Education; Child Hygiene—General, Dental Hygiene, Mental Hygiene, Nursing.

KANSAS MEDICAL ASSISTANTS

The medical assistants in the Fifth Councilor District organized the Ford County Medical Assistants Society on October 31. Ten of the fourteen members are from Dodge City, three from Garden City, and one from Satanta. Miss Patricia Whaley of Dodge City is President; Miss Leo Sayre, Dodge City, Secretary; and Miss Leora Howe, Dodge City, Councilor of the Fifth District. The next meeting of the group will be a Christmas party.

The Sedgwick County Medical Assistants Society met at the Innes Tea Room on November 20, for dinner. Thirty-one members were in attendance. Mr. Mohrbacher of the Wichita Credit Bureau presented a movie entitled "Credit —The Life of Business."

The Topeka Physicians Assistants Society met for its Christmas party on December 2. Following a gift exchange Mr. Lahnoe Euler showed the members colored films of Puerto Rico.

The Wyandotte County Medical Assistants Club, under the direction of Rowena Reising and Margaret Winterscheidt, recently published the first edition of its bulletin. It is in the form of a four-page pamphlet, carries advertising, and news of its members.

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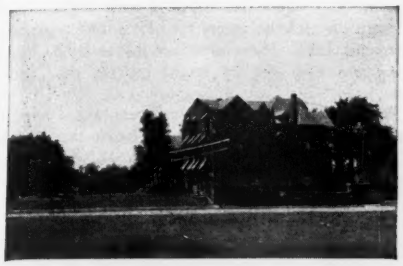

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PRESIDENT'S MESSAGE

Our thoughts turn again at this season of the year toward the star in the East and the light which lead the wise men to the manger which has revolutionized the world.

"Light" is the key word of the spirit of Christmas so let us take it as our Auxiliary slogan as we forge ahead in our work of breaking thru the darkness of ignorance by spreading the light of knowledge of health and the objectives of organized medicine to the laity.

"Man overboard" was the cry heard by a man in his cabin as his steamer ploughed thru the ocean in the dark of night. The man in his cabin, realizing he could do nothing to help on deck, knew that a light would be needed. Taking the small lamp in his cabin to the port hole, he held it so the light would shine across the waters and it was his light that showed where to cast the rope to save the life of the struggling man.

As torch bearers of The Kansas Medical Society it is our obligation to light the way in an effort to save the lives and health of the people of our own community and state.

Hygeia—one of our torches, offers us an opportunity to desseminate much light and this Christmas season is a splendid time for us as doctors families, to use it for gifts. Because our contest soon closes it is a good time for Auxiliaries to place it in more schools, libraries and the hands of more readers.

As I think of our state medical family today, because it is Christmas time, I am wishing you happiness. And tomorow I shall still wish you happiness; and so on thru the year.

Mrs. Irma Blasdel.

THE HOME OF THE A. M. A.

The National Board members visited the seven floors of the home of the A.M.A. where we found 700 busy people compiling records, assembling materials for the A.M.A. Journal, Hygeia and all sorts of medical information as well as printing it. The silent typewriters, the many modern machines which take care of great volumes of work are indeed interesting to see.

The last department added is "Medical Preparedness" which occupies a very large room with a new force of workers.

Among the many rows of cabinets our attention was called to the files where the record of each medical student is kept from the time he enters medical school until twenty years after his death. If diplomas are lost or stolen and this often happens they can be traced quickly thru this department.

The Public Health Service department was a revelation to us as we were told by Dr. W. W. Bauer that 900 talks and 150 drama programs for Rotary, P.T.A. and other groups were available, for one week, for only the postage which averages ten cents.

The Radio poster had its birth in this department and I hope each Auxiliary will post your county with these attractive sheets. Dr. Bauer suggests they be placed on bulletin boards in Y.M.C.A.'s, Y.W.C.A.'s, libraries, schools, in drug stores and in offices where utility bills are paid. If you are in Chicago this department will give you tickets for the broadcast as 300 seats are available.

If your local station is not broadcasting the A.M.A. program ascertain the reason. Perhaps you can arrange for it to be transcribed and used at another hour but this change should be announced in your local paper.

This department of the A.M.A. sends out speakers and we are hoping to have one in Kansas before this year ends.

We met Mr. Cargill and shall tell you more about Hygeia in our board report. In 1924-25 the Auxiliary secured twenty-eight subscriptions to Hygeia but in 1939-40 there were 9,647 to our credit.

REPORT OF THE NATIONAL BOARD MEETING

In a real blizzard the 29th of November it was my privilege to attend the National Auxiliary Board meeting held at the Palmer House in Chicago, where an alert body of thirty-five women from the four corners of the United States were brought together to further the work of our Auxiliary.

Interesting plans for the National Auxiliary meeting to be held in Cleveland, June 1 to 6, were announced.

Each Auxiliary member in the United States will receive questionnaires from the Public Health Department of the A.M.A. concerning "Women's Health Interests."

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This is to be the work of our Public Relations Committees and they hope helpful in discerning the interests and needs of the public so far as the A.M.A. Broadcast and other information along this line is concerned.

Mr. Cargill, Circulation Manager of Hygeia, told us the circulation for Hygeia in 1939-40 was 110,000. This is the first year it has paid its own way and when the circulation is increased to a certain point the Board of Trustees expects to reduce the price—perhaps to half the present rate. It was suggested that we stress the eight months subscription for one dollar.

Doctors now subscribe for 18,000 copies of Hygeia yearly, and it is estimated that two million people read these copies in doctor's offices. Mr. Cargill says if the doctor's copy is stolen he'll gladly replace it with a sample copy.

Four members of the National Advisory Committee and Dr. Van Etten, National A.M.A. President, were guests at the board luncheon and gave much good advice and praised the Auxiliary for its accomplishments and remarkable growth. We were urged to remember our possibilities and responsibilities.

We were told we must be guided in our legislative work only by our advisory committees of our state and county.

Dr. Van Etten urges careful medical examination for every school child and added that "Young America needs to be disciplined." About one-third of the boys called for this draft are being rejected so there is much to be desired in public health work.

West Virginia and Utah have sent in subscription for their quota to the Bulletin, and Kansas, to November 24, had sent in sixteen of our quota of eighty-eight subscriptions. If you send your order at once to Mrs. H. L. Scales of Hutchinson you'll get all four issues.

THE STATE BOARD MEETING

The State Board of the Auxiliary met in Parsons, December 3, at the home of Mrs. Blasdel with nineteen members present.

Plans for the State Convention to be held in Topeka in May were discussed.

Mrs. Bruce Meeker of Sedgwick County was elected Councilor of the Sixth District to take the place of Mrs. E. E. Tippen who resigned.

The excellent reports of work accomplished in the various counties, by councilors and standing committee chairmen was very heartening. Our only regret is that every county was not represented and that every member of the board was not present because we needed you and you would have been inspired, as we were, to carry on your work in a bigger way. Some were delayed unavoidably at the last minute and we were so disappointed.

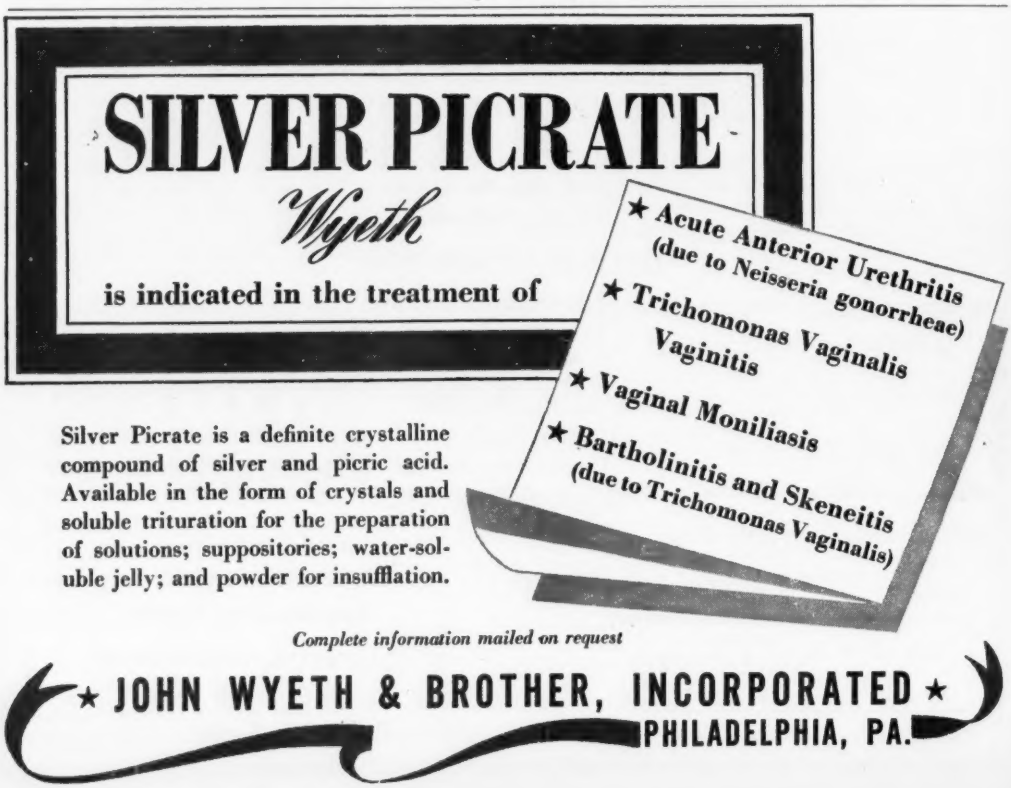
Please read Mrs. West's report of the meeting in the Newsletter.

EXHIBITS

For a list of "Medical Exhibits for Fairs and Expositions" see the A.M.A. Journal, October 19, 1940.

STAMPS

It was decided at our State Board Meeting that it would be best for each auxiliary to collect stamps if they wish and sell them for their own philanthropies. There are two firms in Kansas City which pay ten cents per pound $10.00 per hundred pounds for a mixture of all values. They are not interested in just one-cent, two-cent, and three-cent stamps unless there is a good proportion of other stamps, parcel post and otherwise. Perhaps these can be sold in your own locality. If a notice is inserted in your local papers it is surprising how many people bring you stamps.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GYNECOLOGY—Clinical Diagnostic and Didactic Course every week.

OBSTETRICS—Informal Course every week.

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Felix Platter (1536-1614), professor of medicine, and municipal and hospital physician at Bale, relates in his memoirs how he and his fellow students, armed to the teeth, dug up corpses at night in the cemetery at St. Denis. Wrapping themselves in their night clothes, they crept through a hole in the closed city gate. The cadavers were brought to the rooms of one of the students and dissected there. Because of the dreadful odor they poured vinegar on themselves. When they again approached the cemetery at night the watchman shot at them with cross-bows.—Ciba Symposia.

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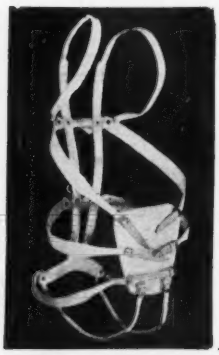

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INDEX TO ADVERTISERS

American Optical Company XII
Arnold Drug Company 538
Balyeat Hay Fever & Asthma Clinic III
Capper Printing Company 533
Cook County Graduate School of Medicine . . 537
Grandview Sanitarium VI
Hanicke Mfg. Company, The P. W. 527
Holland-Rantos Company, Inc. XI
Hotel Jayhawk 533
Isle Company, The W. E. 538
Johnson Hospital 529
Lattimore Laboratories III
Library, University of Kansas 529
Lilly & Company, Eli X
Luzier's, Inc. 535
Major Clinic, The 527
Mead Johnson & Company XIV
Medical Protective Company 533
Mosby Company, The C. V. 531
Oakwood Sanitarium 537
Overton Electric Company 534
Parke, Davis & Company VII
Petrolagar Laboratories, Inc. II
Physicians Casualty Association 538
Quinton-Duffens Optical Company 527
Ralph Sanitarium, The 533
Radium & Randon Corporation 529
S.M.A. Corporation XIII
Service Print Shop 529
Trowbridge Training School 538
Upjohn Company, The V
Woodcroft Hospital 529
Wyeth Bros., Inc., John 536
Zemmer Company, The 534

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The new instrument, announced by Dr. J. F. Neumueller, director of the company's bureau of visual science, requires only a half minute for the diagnosis, and its performance is based on the phenomenon of the after-image —the sensation of seeing an image after the stimulation causing it has ceased to exist. The test is based on the fact that normal eyes can definitely locate objects in space. If the eyes and brain are unable to do this, as determined by the after-image test, normal visual functioning cannot be restored.

SEASON'S GREETINGS

At this Holiday Season we extend our Cordial Thanks and Appreciation for the Many Evidences of your Friendship during the Past Year. May we Express a Sincere Wish that the New Year bring You and Yours Health and Security.

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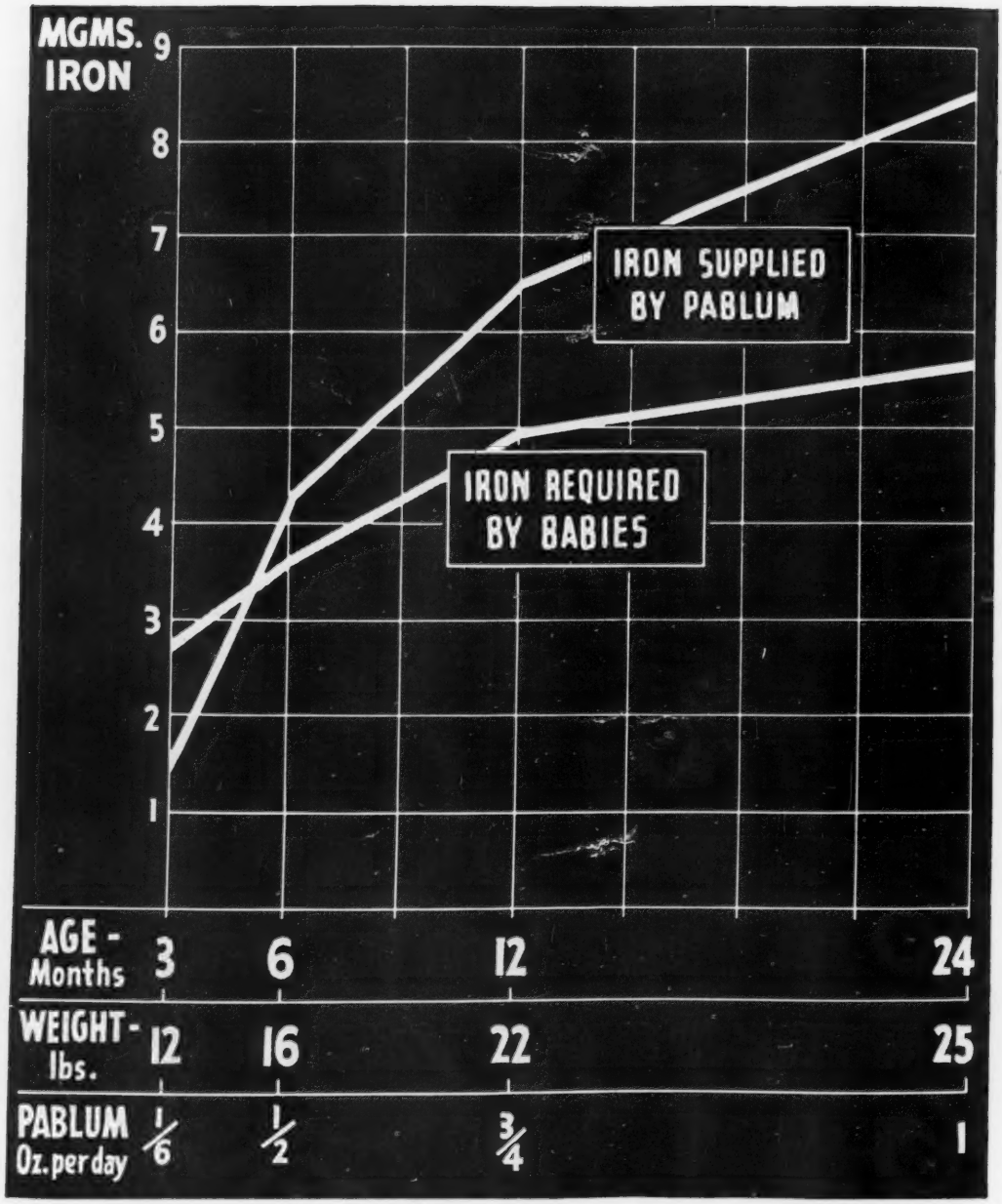

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